



In the Name of Allah, the Beneficent, the Merciful

# Soil Science News

Quarterly Newsletter of **Soil Science Society of Pakistan**

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## EDITORIAL

### Organic Farming: Fantasy or Reality

The essence of agriculture is to feed humans by providing food and fiber. As soil supports the growth of most of our food and fiber needs, its sustainable productivity is a key to meet human needs for food and fiber. However, sustainable productivity can be maintained only if we supply all the essential nutrients in the required quantities for good crop yields in an environmentally acceptable and sustainable way. Traditionally, soil productivity was maintained by applying recycled farm waste organic materials and/or by incorporating crops or crop residues.

It was in 1950, when chemically manufactured substances, i.e., fertilizers (contain varying amounts of inorganic nutrients – nitrogen, phosphorus, and potassium) were used to encourage plant growth and crop yields.

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### Condolences for Earthquake Victims

The Soil Science Society of Pakistan records with a deep sense of grief and sorrow the sad and worst natural trauma in the history of Pakistan, in which at least 86,000 people have demised, over 100,000 have been injured and an estimated 2.8 million have become homeless. Extensive damage has occurred throughout Kashmir and other northern parts of the country. Numerous towns and villages have been severely affected or completely destroyed.

## NEWS AND VIEWS

### SSSP Special Seminar

The Soil Science Society of Pakistan (SSSP) organized a special seminar at its General Body meeting held on September 21, 2005 at Ayub Agricultural Research Institute, Faisalabad. Prof. Dr. Muhammad Arshad,



*From left: Professor Dr. Kazi S. Memon, Dr. A. Rashid, , and Dr. Sabir Shah at the General Body Meeting Session*

University of Agriculture , Faisalabad made a

**Dates of 11<sup>th</sup> Congress of Soil Science Changed to 28-31 March, 2006**

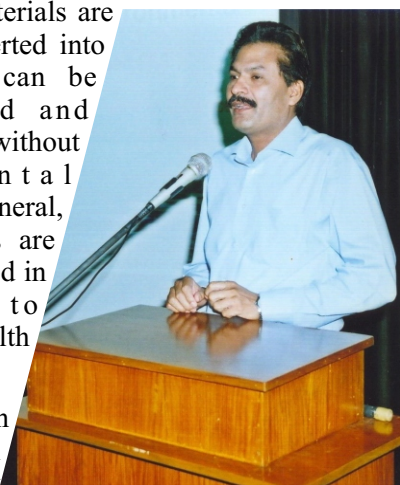
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presentation on “Recycling of organic waste into value-added product for sustainable agriculture and environment”. A brief of the seminar follows:

Organic waste materials are available in huge quantities in the form of farm waste, city waste, poultry litter and industrial waste. Continuous accumulation of these materials is a potential source of land, water and air pollution. These organic waste materials could be used as soil amendments. However, most of the raw organic wastes are not suitable for direct application to the

soil. Moreover, availability of organic material/waste could be limited if it is used as much in huge bulk volume (i.e.,  $t\ ha^{-1}$ ) and may not also be cost effective. Composting is one of the major recycling processes in which organic materials are biologically converted into substances that can be handled, stored and applied to a land without environmental implications. In general, finished composts are regarded quite good in their ability to improve soil health and plant growth.

There has been renewed interest in the compost technology to improve quality of the end product. A novel approach to convert composted material into a value-added organic product may be the enrichment/blending of compost with nutrients and biologically active substances (BAS), which may also be effective even when added in substantially small amounts (i.e., at  $kg\ ha$  dosage). Moreover, use of chemical fertilizers could be reduced without



effectiveness of organic fertilizer. Overall, there was ~25% saving of N – fertilizer with the application of  $250\ kg\ ha^{-1}$  enriched compost. Novelty of this approach is that the organic fertilizer was used at substantially reduced rates ( $250\ kg\ ha^{-1}$ ) compared to conventional organic manures which are usually used in tonnage. Reduction in environmental pollution due to huge piling of organic waste is an extra benefit.

### SSSP General Body Meeting

The Soil Science Society of Pakistan (SSSP) organized the mandatory annual General Body meeting on September 27, 2005 at Ayub Agricultural Research Institute, Faisalabad. Agenda of the meeting was: 1) Secretary's Report; 2) Treasurer's Report; 3) Amendment in Bylaws; and 4) any other matters.

The meeting started with the recitation of Holy Quran. After that, Dr. Zahir Shah, Secretary, SSSP presented Society's progress report and informed the members about decisions taken up by the Executive Council in various meetings. Dr. Muhammad Tariq Sadique, Treasurer, updated the members about financial position of the Society.

Most important feature of the meeting was approval of amendments in the Society's Bylaws. The amendments were proposed by a committee comprising of Dr. A. Rashid (Convener), Dr. Muhammad Rashid (Member), and Dr. Zahir Shah (Member) and subsequently recommended by the Executive Council.

In the end, President, SSSP thanked



Participants of General Body meeting at Special Seminar of SSSP

compromising on per unit yield on sustainable basis.

Organic waste of fruits and vegetables was collected and composted in a locally-fabricated unit. The composted material is enriched/blended with N (25% of the recommended N dose) and/or L-tryptophan (L-TRP, @  $5\ mg\ kg^{-1}$  compost). Enriched compost was applied just @  $250-300\ kg\ ha^{-1}$  to maize and wheat, grown in soil fertilized @ 0, 25% and 50% of the recommended urea-N rates. Results of a series of pot and field experiments revealed that the enriched compost, supplemented with 50% of the recommended fertilizer doses, was almost as effective in improving the growth and yield of maize and wheat as full rates of chemical fertilizers (NPK). Enrichment of the compost with L-TRP further improved the

all participants as well as the AARI management, for extending logistic support, the organizers, particular Dr. Shahid Javed, Mr. Zahid Saleem, and Dr. M. Younas Nadeem for their hard work in making this event a successful.

### PROMOTIONS, APPOINTMENTS, and POSTINGS

**Dr. Azeem Khalid** and **Dr. Hafiz Naeem Asghar**, Lecturers, Institute of Soil and Environmental Sciences, University of Agriculture, Faisalabad have been promoted as Assistant Professors.

**Mr. Muhammad Rashid**, Research Fellow, Land Resources Research Program, National Agricultural Research Centre, Islamabad, **Mr. M. Imran Latif**, **Mr.**



**Mohtsim Billah, Mr. Muhammad Tahir Shah, Mr. Sarosh Tariq Alvi, and Mr. Amanat Ali** have joined the Pesticide Residual Laboratory, Kala Shah Kaku, as Research Officers.

**Mr. Tahir Hussain Chattha** has been selected as Land Reclamation Officer/Soil Supervisor in Irrigation Department, Punjab.

**Dr. Nasim ul Hassan Shah**, has been appointed Technical Services Advisor, Engro Chemical Pakistan Ltd., Karachi w.e.f August 01, 2005. Dr. Nasim joined Engro in October 1994 as Technical Services Officer. Before joining Engro, he served the Government of Punjab as Research Officer in Directorate of Soil Fertility and Soil Testing Institute, Lahore.



***Congratulations to all from Soil Science News!***



Participants of General Body Meeting endorsing a By-laws amendment

### INTERNATIONAL VISITS/ CONFERENCES/FELLOWSHIPS

**Professor Dr. Muhammad Arshad**, University of Agriculture, Faisalabad visited Cornell University, Ithaca, NY, University of Maryland, College Park, MD and University of California, Riverside, CA during June 15 to August 14, 2005.

**Dr. Wisal Muhammad**, Principal Scientist, NIFA and Councilor SSSP (NWFP), participated in the 1<sup>st</sup> Research Co-ordination meeting (RCM) of the IAEA Co-ordinated Research Project (CRP) on "Integrated Management of Soil, Water and Nutrient for Conservation Agriculture" held at Vienna, Austria on 13-17 June, 2005. Eleven research contracts and agreement holders, from different parts of the world, attended the meeting and presented their research findings and future work plan.

**Dr. Muhammad Ibrahim**, Agri. Chemist (Soils), AARI, Faisalabad; **Dr. Shahid Mahmood**, Agri. Chemist, Soil & Water Testing Laboratory, Lahore; **Mr. Nadeem Tariq**, Engro, Faisalabad; and **Dr. A. Rashid**, CSO, NARC, Islamabad participated and

presented papers in the 3<sup>rd</sup> International Symposium on All Aspects of Plant and Animal Boron Nutrition held at Wuhan, China on 10-13 September, 2005.

**Dr. Inayatullah Rajper**, Assistant Professor, Department of Soil Science, Sindh Agriculture University Tandojam has been awarded Post-Doctoral Research Fellowship by Islamic Development Bank for 6 months at Putra University, Malaysia, w.e.f. September 2005.



### RECENTLY COMPLETED PhDs

**Dr. Muhammad Akmal** has recently completed his PhD in Soil Science from Zheyang University China. His PhD dissertation was "*Change in the biomass, enzymes activity and diversity of microbial communities under lead and cadmium, pollution in soil*".

**Dr. Muhammad Javed Akhter**, Assistant Professor, Institute of Soil and Environmental

Sciences, University

of Agriculture, Faisalabad has completed PhD under the supervision of Professor Dr. Muhammad Arshad, at University of Agriculture, Faisalabad.

**Dr. Riaz Ahmed Sial**, Agricultural Chemist, Pesticide Residue Laboratory, Kala Shah Kaku, has completed PhD under the supervision of Professor Dr. M. Fayyaz Chaudhary, Department of Biological Sciences, Quaid-e-Azam University, Islamabad. His research thesis was "*Effect of Industrial Effluents on Soil and Crop*".



Sindh Agriculture University Tandojam has conferred PhD degree in Soil Science upon **Dr. Midrarul Haq** on 10<sup>th</sup> September 2005. Mr. Midrar worked on "*Effect of industrial effluents on soil and water contamination in some selected sites of NWFP and Sindh with special reference to trace elements*" under the supervision of Dr. Haji Khan Puno, Professor of Soil Science.

***Congratulations to all for earning the highest academic qualification!***

## RETIREMENT

**Mr. Sachal Dharijo**, Assistant Professor, Department of Soil Science, Sindh Agriculture University, Tandojam has retired from his services.

### Organic Farming: Fantasy or Reality

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Use of chemical fertilizers, alongwith pesticides and insecticides, not only increased crop production dramatically worldwide but also improve the produce

### 11<sup>th</sup> Congress of Soil Science: Change in Dates

As you are aware, the Soil Science Society of Pakistan (SSSP) intended to organize 11<sup>th</sup> Congress of Soil Science on 13 - 16 March, 2006 at NARC, Islamabad.

Later, Executive Council of SSSP came to know that the University of Agriculture, Faisalabad will have its centennial celebrations on 14-16 March 2006. Thus, it was realized that the university celebrations may hamper Congress participation seriously.

Consequently Executive Council of SSSP, in consultation with Organizing Committee of the Congress, has changed dates of the Congress to **28-31 March 2006**. Other deadlines remain the same.

We apologise for any inconvenience, if caused so.

quality. However overuse and improper use of fertilizers have also damaged the environment and affected the health of humans, animals, and plants.

Consequently, various organizations of developed countries are advocating for Organic Farming, i.e., producing all kinds of agricultural products organically, without the use of fertilizers, pesticides, etc.

However several question ought to be answered for a satisfactory return to the old low-yield crop husbandry. For example, is organic food more nutritious than conventional food? Are organic yield levels enough to feed a fast-growing population of under developed countries?

The answers are very simple. It looks very difficult to feed fast-growing population of under developed countries as crop yields were very low before the introduction of chemical fertilizers. Even today, more often organic farming is likely to produce less than one half yield per unit land area compared with the conventional yield. Although high yielding varieties have been introduced with the passage of time, their yield potential might not be explore without the application of chemical fertilizers. Developed countries may be in a position to feed worldwide but also improved t their population by organically produced food, but the under developed countries require much higher yield levels from lesser resources. As major portion of world population remains under nourished, they can compromise on quality to a certain limits but can not compromise on quantity.

In fact, we are bit unrealistic. On the one hand we are advocating that organically produced foods are more safe for human, but on the other, we are preferring chemically produced medicines as well as snacks and coffee & tea blended with chemical.

Complete eradication of chemical fertilizers is not possible as for as under developed countries are under nourished. However their more efficient use by adopting efficient management practices, i.e. use of small doses and use of organic fertilizers, including animal waste, crop residues to enhance chemical fertilizers use efficiency.

Nevertheless, organic farming can be initiated on trial basis for export purposes. If we could manage to grab a good share of organically produced product foreign market, it would be a good source of foreign exchange.



Participants of the General Body meeting at lunch

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