



In the Name of Allah, the Merciful the Beneficent

Soil Science News

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

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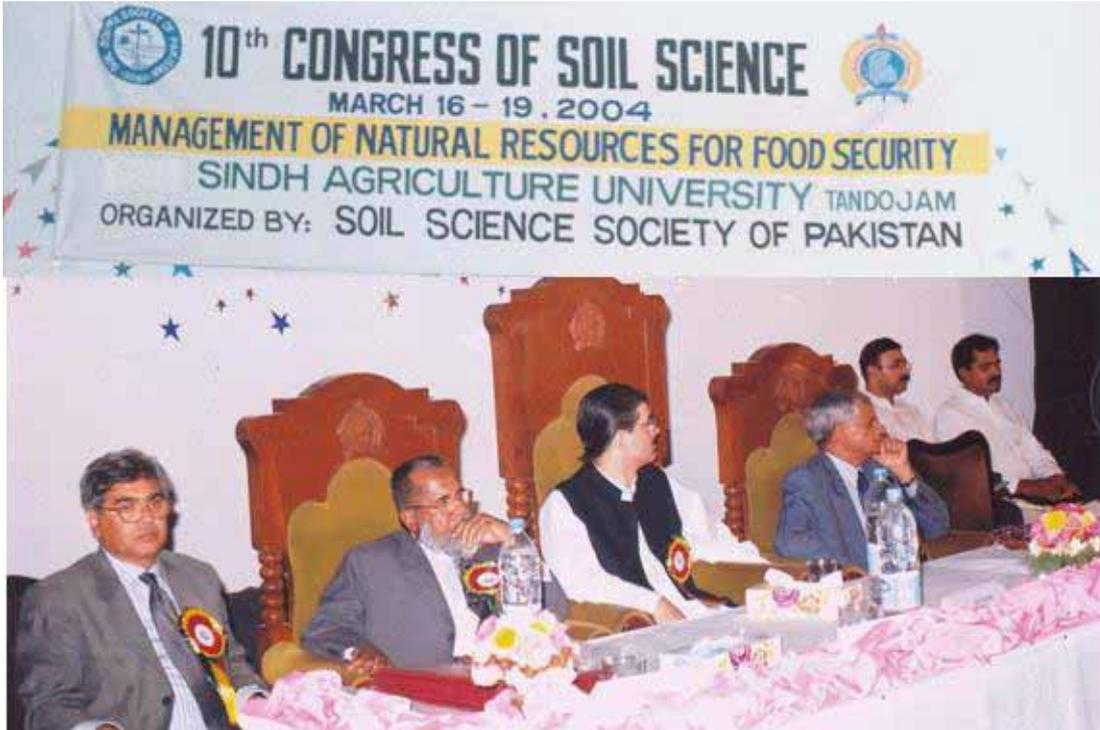
January – March 2004

Vol.5 (No. 1)

EDITORIAL

Commendation

We, on the behalf of the soil science community, commend and congratulate the Executive Council of SSSP and Organising Committee and Action Committee of the Congress for holding the 10th National Soil Science Congress at Sindh Agriculture University (SAU), Tandojam, Hyderabad, Sindh, 16-19 March, 2004. We believe that this mega event was not possible without generous and continuous support and cooperation of the Vice Chancellor, SAU, in terms of hosting the Congress and extending the requisite logistic support. Nevertheless, cooperation and support



From left: Dr. K. A. Malik, Dr. Bashir Ahmed Chandio, Chief Guest Mr. Arif Mustafa Jatoi and Dr. Nisar Ahmad, at the Inaugural Session of the Congress

extended by Sindh Agriculture Department (Research and Extension) and other local institutes, i.e., Agri. Research Institute, Drainage Research Centre, Nuclear Institute for Agriculture, and Sindh

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NEWS AND VIEWS

Professor Dr. Raiz Hussain Qureshi,

Vice Chancellor, University of Agriculture, Faisalabad, has retired after a remarkable professional career in March 2004. Dr. Qureshi, having an excellent academic record, obtained Ph.D. from Univ. College of North Wales, Bangor, UK. He started his professional career



University of Agriculture, Faisalabad (UAF) in 1969. Afterwards, Dr. Qureshi joined NIAB as Senior Scientific Officer, and then, rejoined his parent institution, as Associate Professor. Hereon, he started stepping up the administrative ladder of UAF. Professor Qureshi worked as Chairman, Department of Soil Science; Director Advanced

Studies; Dean, Faculty of Agriculture; and ultimately Vice Chancellor. He also served as President, SSSP, 1997 to 2000. He has more than 200 scientific publications including articles in

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10th Congress of Soil Science

The Soil Science Society of Pakistan organized its 10th Congress of Soil Science, March 16-19, 2004, at Sindh Agriculture University, Tando Jam – first time in Sindh province. Theme of the Congress “Management of Natural Resources for Food Security” was well tuned with the prevailing agricultural situation in the country.



Dr. Nisar Ahmad, President, SSSP, presenting a shield to Chief Guest, Mr. Arif Mustafa Jatoi, Minister for Food and Agriculture, Government of Sindh.

The Congress was attended by a galaxy of national and international agricultural scientists. Registered participants of the Congress were more than 300 – the ever largest number in the history of the Society. There were 25 overseas participants, i.e., from Bangladesh, India, Iran, Germany and Russia. At the occasion, the society published a Souvenir, an Abstract Book and 6th edition of National Directory of Soil Scientists.

Inaugural session of the Congress was chaired by Mr. Arif Mustafa Jatoi, Minister for Food and Agriculture, Government of Sindh. Proceedings of the session started with recitation from Holy

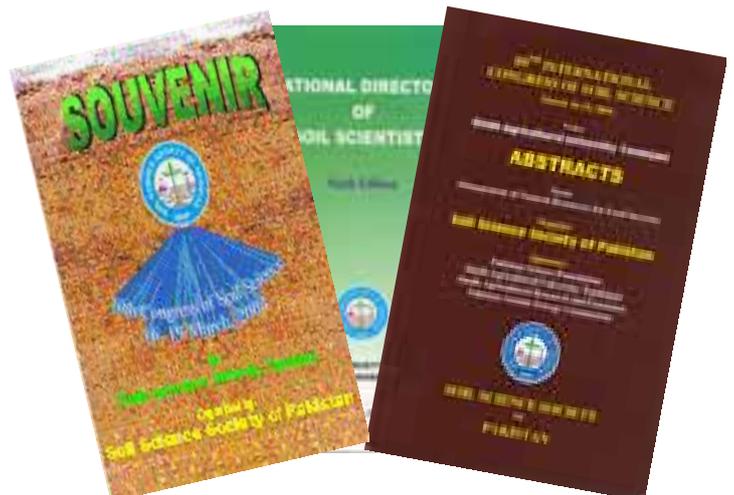
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Qurāan. Professor Dr. Kazi Suleman Memon, Vice President (Sindh), SSSP and Congress Secretary of the Congress, briefed the participants about the history and activities of the Society and elaborated the importance of holding the Congress at Tando Jam. Dr. Memon also readout the messages received from dignitaries at the occasion of the Congress. President, Islamic Republic of Pakistan,

General Pervez Musharraf, in his message, highlighted the importance of agriculture as it is the most important sector for employment and income generation in the country, particularly in rural areas, where 70% people live and accounts for about 25% of real GDP and about 50% employment. Land and water being vital areas of concern, be heightened by the depletion of water resources in the country during recent years. He stated that the key objectives of government policy are to achieve sustainable growth in agriculture for national food security and self reliance Prime Minister, Mir Zafarullah Khan Jamali's

message was focused on the quality of rural life and the goal of his government to lift the poor people out of the poverty trap. He appreciated the fact that soil scientists, technologists, engineers and



agronomists have generated a large body of knowledge for combating the causes of land degradation and improving crop productivity. Also, he emphasized the need to consolidate this knowledge and transfer it to farming communalities for rehabilitating the degraded lands.

Other messages on the occasion came from Professor Dr. Atta-ur-Rehman, Federal Minister Incharge, Ministry of Science and Technology; Sardar Yar Muhammad Rind, Federal Minister for Food, Agri. and Livestock; Dr. Ishrat ul Ebad



Participants of the 10th Congress of Soil Science at inaugural Session

Khan, Governor Sindh; Sardar Ali Muhammad Khan Mehar, Chief Minister, Sindh; Mr. Arif Mustafa Jatoi, Minister for Food & Agriculture, Sindh; Mr. Irfanullah Marwat, Minister for Education and Literacy, Sindh; Dr. Bashir Ahmed Chandio, Vice Chancellor, SAU, Tandojam; and Dr. Nisar Ahmad, President, SSSP.

Dr. Bashir Ahmad Chandio, Vice Chancellor, Sindh Agriculture University, Tando Jam, welcomed the chief guest and the participants. Dr. Nisar Ahmad, President, SSSP, in his keynote address, outlined the factors responsible for land degradation and consequent impact of land degradation on population growth and poverty. Dr. Kausar Abdullah Malik, Member (Bio-Sciences), PAEC, urged the incorporation of emerging technologies in agriculture to meet the future challenges of feeding an ever increasing population in the country.

Chief Guest of the ceremony, Mr. Arif Mustafa Jatoi, Minister for Food and Agriculture, Govt. of Sindh, in his inaugural address, said that it is high time to take stock of the situation and make joint efforts with the participation of all concerned to pave the way for progress of agriculture, address food security issues and focus on poverty alleviation of the rural masses. He appreciated and congratulated the organizers and Sindh Agriculture University for holding this important scientific forum.

Subsequent to the inaugural session, there was a **Plenary Session**, in which leading scientists of the country highlighted the causes of natural resources degradation and their management for sustainable agricultural growth in the country.

A total of 256 research papers were presented in 21 oral and 6 poster sessions. In the oral and poster presentations, crucially important issues pertaining to various disciplines of soil science, i.e., Soil Fertility & Plant Nutrition, Soil Salinity, Soil Physics, Soil Environment, Soil Chemistry, Soil Biology & Biochemistry, Soil & Water Conservation, were highlighted, elaborated, and discussed.

A special Discussion Session was another

distinction of this Congress.

In this session, participants from various participating countries shared their respective soils problems and the approaches adopted to tackle them.

Concluding Session of the congress was chaired by Dr. Bashir Ahmed Chandio Vice Chancellor, SAU. Congress Secretary, Dr. Kazi Suleman Memon, briefed the chief guest and audiences about the three-day Congress proceedings. Thereafter, Members of the Local Action Committee and other Committees



Dr. K.S. Memon, VP, SSSP/ Congress Secretary at the Inaugural Session

responsible for organizing the Congress were awarded appreciation shields and certificates. Also, cash awards and appreciation certificates were presented to authors of the first four best poster papers. After that Dr. Mohsin Iqbal, Director NIAB/Chairman Congress Recommendation

Committee, presented the Congress recommendations. The Chief Guest, Dr. Bashir Ahmed Chandio, appreciated the efforts of the Society, Organizing Committee and Local Action



Congress Participant with VC SAU and President SSSP

committee for elevating the soil science profession and holding the Congress at Sindh Agriculture University. In the end, President, SSSP thanked the Chief Guest, national and international participants, organizers and sponsors of the Congress.

Keynote Address at 10th International Soil Science Congress

Management of Natural Resources for Food Security by Dr. Nisar Ahmad, President, SSSP

The present population of Pakistan is about 150 million and may double in the next 30 years. It means Pakistan has to double its cereal production to meet food demand and to stimulate economic growth. About 2.8 billion people in developing countries live on less than \$ 2 a day and among these 1.2 billion earn less than \$ 1 a day. Similarly, more than 1/3 population of Pakistan lives below the perversity line.

Pakistan has a total geographical area of 80.0 million ha. Of this only 22.3 million ha (28%) is cultivated. About 18.0 million ha of the cultivated land is irrigated while remaining is rainfed. The soil resources inventory reveals that 12.4 million ha of irrigated land has high agricultural potential, and agricultural production can be doubled if soils are managed properly. There is also a scope to increase production on another about 9.0 million ha of land which includes both irrigated and dry farming areas having moderate to low agricultural potential.

Land resources, i.e., climate, water, soils, forest, pasture and wildlife, on which agriculture depends are being destroyed by land degradation, though they can be conserved by sustainable land management.

Land degradation includes water erosion, wind erosion, water logging, salinization, use of brackish water, and soil fertility depletion. The direct and indirect causes of land degradation are linked with

population growth and poverty. The limited land resources and increase in rural population results in small farms, low production and increase in landlessness. The net consequence of this leads to poverty. Land shortage and poverty taken together lead to non-sustainable management

practices, the direct causes of degradation. This is a vicious cycle of causes and effects of land degradation, low productivity and poverty. The only way to intervene this nexus is further research and application of the emerging innovative technologies.

There are different estimates related to economic costs of land degradation, based primarily on production loss and replacement cost. Production loss is expressed as a percentage of production from un-degraded soils. For erosion and soil fertility decline the assumption are 5-10 percent production loss for a light degree of degradation, 20% for moderate degradation and



A Technical Session in Progress

75% for strong degradation. For salinity, the respective losses are 15, 65 and 100 percent, respectively. Replacement cost is the cost of additional input used by the farmers in order to regain a certain production level. Pakistan falls in severely land degraded area of the world. It has been reported that resource degradation in Pakistan has led to overall productivity loss by one-third. It means Pakistan is suffering roughly a loss of Rs

150 to 180 billion per year of agriculture GDP due to degradation processes, and thus, leaving a deep negative impact on poverty and environment.

The fast emerging encouraging developments



President SSSP and foreign delegates in a Special Discussion Session

in biotechnology, IT energy and climate change are new challenges for the scientists as well as government policy makers – to best utilize these technological opportunities for the benefit of farmers. The impact of new technologies will, to a very large extent, depend on government policies to ensure food security for the future. More investments in public sector research will be needed so that potential benefits from new technologies can reach the low-income farmers. Conclusive policies and new institutions are urgently needed on intellectual property rights, bio-safety and food safety regulations, facilitation of markets for improved seed and other inputs. Policies and investments are also urgently needed to strengthen national agricultural research systems with a clear problem solving focus by using all appropriate scientific methods including precision farming and genetic engineering.

Congress of Soil Science

A Recommendation Committee, comprising of senior soil scientists/agronomists belonging to institutions from throughout the country, formulated recommendation based on the presented papers and the accompanying discussions during the 3-day Congress deliberations. Congress recommendations have been categorized into three classes, i.e., for researchers, policy makers and extension workers are stated below:

For Researchers

1. Long term and permanent experimental sites be maintained under different agro-ecological zones pertaining to different disciplines of soil science.
2. Soil and environmental degradation should be combated by strengthening current research activities and planning new ones.

3. All possible means of using organic and inorganic amendments for problem soils should be promoted through incentives to farmers.

4. Balanced use of chemical fertilizers be promoted

for optimum crop productivity through increased nutrient use efficiency as well as positive interactions regarding rate and method of nutrient application. Routine type of work on N and P effect on crop production may be minimized.

5. Co-ordinated research efforts, at national and international level, be promoted and strengthened to address present water shortage such as

development of nutrient and water efficient and salt-tolerant cultivars and water management practices.

6. Strengthening of quality soil testing services throughout the country should be ensured.

For Policy Makers

1. Present day agriculture is facing acute shortage of water resulting in decreased yields and pressure on groundwater. It needs to be mitigated through developing new water reservoirs and decreased pumping of brackish groundwater.

2. Availability of agricultural inputs, such as fertilizers, amendments, seeds etc., should be ensured in time and space to farmers to meet national yield targets.



3. Standardization of bio-fertilizers should be made mandatory before marketing.

4. Emoluments to all new appointees in agriculture should be comparable to BPS-17. Services

structure of scientists working in different agricultural disciplines be reviewed and made in conformity with PAEC.

5. The SSSP should convene meetings of experts for developing priorities and policies for soil and water related research to provide guidelines for the policy makers and researchers.



An Indian delegate receiving best poster presentation certificate from Dr. Bashir Ahmed Chandio, VC, SAU.

6. All research, development and policy planning related to agriculture must be made in consultation with the relevant specialists.
7. The recognition of agriculture researchers should be based on the value of contribution towards achieving national goals and enhancing socio-economic impact on farming communities in addition to consideration of impact factor of scientific papers. Research Allowance to agriculture scientists should be restored.
8. Soil being a non-renewable resource must be considered as most precious input of agricultural production and thus must be duly recognized by inducting professionals in the field.
9. Enrolment of students in agriculture educational institutions must be demand oriented.

SPECIAL SEMINAR

The Soil Science Society of Pakistan is organizing a special one-day seminar on “**Role of Micronutrients in Fruit Crops Production**” in Quetta, Balochistan during September/October 2004. Those who are interested to present papers/participate, please contact **Dr. Muhammad Abdullah**, Director, Water Resources Research

E-mail: mmh

10. Efficient management of natural resources demands their characterization afresh for developing a new resource inventory. Information available at present is very old as it

is based on aerial photography in the 1950s. For this purpose Soil Survey of Pakistan must be upgraded to a Department level with the provision of adequate funds and qualified staff.

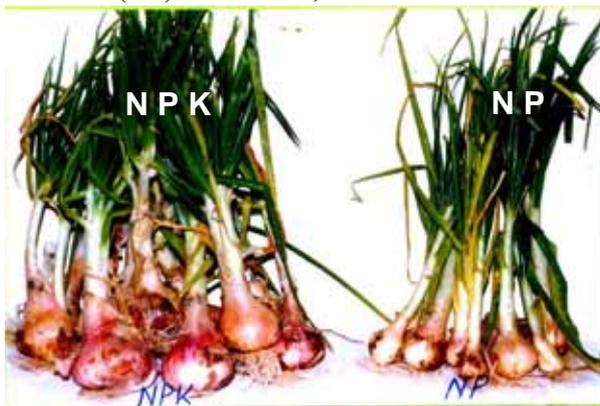
11. Farming communities should be given economic incentives and technical support for the restoration of marginal land and sustainable use of brackish groundwater.

For Extension/Outreach Workers

1. Balanced use of chemical fertilizers must be promoted for optimum crop productivity through individual nutrient use efficiency as well as positive interactions.
2. The concept of Integrated Plant Nutrient Management (IPNM) should be promoted as it will not only release pressure on chemical fertilizers but also maintain natural resources and improve yield levels by increasing nutrient and water use efficiency.
3. Innovative technologies, like laser land levelling, furrow-bed, foliar feeding, fertigation, etc must be popularized. Such work can best be promoted through increased involvement of farming communities.

Potash Increases Yield of Onions

Field experiments on K deficient sandy loam soils were conducted by the scientists of Land Resources Research Program, NARC, Islamabad. Off-season onion showed a tremendous response to potash application. Onion bulb yield was doubled (55 tons ha⁻¹) with 75 kg K₂O as compared to control (NP). However, there was no further



increase in yield with increased K fertilizer levels. Both the sources of potash, i.e., MoP and SoP, had almost similar effect on onion yield.

HONOURS AND AWARDS

Professor Dr. Muhammad Arshad and Dr. Zahir A. Zahir, Asstt. Professor, Institute of Soil and Environmental Sciences, University of Agri. Faisalabad have been awarded **Research Productivity Allowance - 2002** by

the Pakistan Council for Science and Technology, Ministry of Science and Technology.

Mr. Ahmad Zeb and **Mr. Iqrar Hussain**, students, Department of Soil & Environmental Sciences, NWFP Agri. Univ. Peshawar, received **Presidential Award of Rs 5000/-** for securing first position in B.Sc. (Hons.) Agric. among tribal students for the year 2002 and 2003, respectively.

Mr. Shah Hussain, student, Department of Soil & Environmental Sciences, NWFP Agri. Univ., Peshawar, was awarded Silver Medal for obtaining first position in B.Sc. Hons. Agri. among the students of Faculty of Crop Production Sciences for the year 2003.

Congratulations to all for earning professional distinctions!

PROMOTIONS, APPOINTMENTS, POSTINGS

Dr. Bashir Ahmad Sheikh, Professor, Faculty of Animal Husbandry and Veterinary Sciences, SAU, has been appointed Vice Chancellor, SAU, Tandojam, in March 2004.

Dr. Kazi Suleman Memon, Professor, Department of Soil Science, Sindh Agriculture University, Tandojam, has been appointed Dean, Faculty of Crop Production, SAU, Tandojam.



Chaudhry Abdul Ghaffar, DG, (Agri. Ext. & Adaptive Research), Government of Punjab, has been given the additional charge of DG (Research), AARI, Faisalabad as a consequence of the sad demise of Dr. Ghulam Ahmad, DG (Research), AARI, Faisalabad.

Dr. Ahmad Bakhsh, AC, Agric. Research Institute, Dera Ismail Khan has been transferred and posted as Director, Barani Agric. Research Station, Kohat.

Dr. Saifur Rehman, Agricultural Chemist, Barani Agri. Research Station, Kohat has been assigned the responsibilities of Director, Agri. Research Station, Serai Naurang, Bannu.

Mr. Abdul Ghani, Assistant Soil Fertility Officer, ARS, Mingora, Swat has been promoted as Agricultural Chemist, ARS Mingora, Swat.

Congratulations to all from Soil Science News!

VISITS AND FELLOWSHIPS

Dr. Rizwan Khalid, District Officer (Soil Fertility) Soil and Water Testing Lab., Chakwal,

Mr. Mohiudin Dilshad, A.D. (Lab.), Soil and Water Testing Lab., Rawalpindi, and **Syed Zia-ul-Hassan Shah**, ARO, Soil Fertility, ARI, Tandojam, have been awarded Indigenous Ph.D. Scholarship - 2003 by Higher Education Commission.

Congratulations to all from Soil Science News!

OBITUARY

The Soil Science Society of Pakistan records with a deep sense of grief and sorrow the sad demise of **Dr. Ghulam Ahmad Chaudhary**, DG (Research), AARI. Dr. Chaudhary was graduated in 1963 and Master's in 1966 from UAF. Afterwards, he also completed MS from American University of Beirut, Lebanon in 1976 and Ph.D. from Univ. of Southampton, U K in the field of Plant Breeding & Genetics in 1993.



Dr. Chaudhary joined Punjab Agriculture Department, (Research Wing) as Research Assistant in 1966, was selected Assistant Botanist (Tobacco) in 1971 and Tobacco Botanist in 1978. He was the founder Director (1981-99) of Barani Agricultural Research Institute at Chakwal. He was promoted as Director General Agriculture (Research), AARI, Faisalabad in December 1999 and made strenuous efforts for the development of agriculture in Punjab and made all out efforts to develop friendly environment in Agricultural Research to his last hour when he departed to the heavenly world on January 13, 2004.

Dr. Ghulam Ahmad Chaudhary served Govt. of the Punjab, Agriculture Department (Research Wing) for 38 years and published more than 100 research papers in national & international journals. He developed 6 varieties of wheat, 3 of groundnut, and one each of rapeseed, mustard, mung, and chickpea. Dr. Chaudhary was awarded 'Hamdard Foundation Farm Guide National Prize' by the National Farm Guide Council of Pakistan in 1995.

Malik Muhammad Tahir, PSO (Rtd), NIAB has been expired in Lahore. He joined PAEC in 1963 as SO after completed M.S. from University of Saskatchewan Canada. His research work was focused on micronutrients. He had about 60 research publications to his credit.

Mr. M. Rafique Gill, Soil Bacteriologist, AARI, Faisalabad has expired in Faisalabad on January 31, 2004. Mr. Gill started his professional

career from Agri. Chemistry Section, AARI, Faisalabad in 1972. Afterwards, he joined Soil Salinity Research Institute, Pindi Battian as Assistant Agri. Chemist and Soil Bacteriology, AARI, Faisalabad as a Agricultural Chemist.

May Allah Almighty bless the departed souls with forgiveness and eternal peace.

ATTENTION

Papers presented in the 10th National Congress of Soil Science would be published in a special issue of Pakistan Journal Soil Science after peer review. Please submit your papers (in duplicate, along with a soft copy) to Dr. M. Mohsin Iqbal, Chief Editor PJSS/Director NIAB, P.O. Box 128, Faisalabad, Pakistan. A prompt action in this regard would certainly help in publication of papers.

Principles of Soil Physics, by Rattan Lal and M. Shukla. 2004. This detailed reference provides unparalleled coverage of issues related to soil physics, structure, hydrology, aeration, temperature, and analysis — incorporating valuable assessment methods, graphs, problem sets, and tables from recent studies performed around the globe. Price: US \$95.00. Published by Marcel Decker Inc, New York.

Sustainable Agriculture and the International Rice–Wheat SYSTEM, by Rattan Lal, P. Hobbs, N. Uphoff, D. O. Hansen. 2004. Identifies knowledge gaps, defines priorities, and formulates recommendations for the improvement of the rice–wheat farming system—revealing new systems of rice intensification and management while illustrating the application of no-till and conservation farming to the rice–wheat system with case studies from India, Nepal, Pakistan, and Bangladesh. Price: US \$175.00. Published by Marcel Decker Inc, New York.

Salt-Affected Soils: Principles of Management by A. Ghafoor, M. Qadir, and G. Murtaza. 2004. The book consists of 15 Chapters (304 pages) pertaining to various aspects of salt-affected soils incorporating local research experiences. The book is a good addition to the local pool of knowledge, and must be a useful resource for teachers, researchers and extension workers.

Price: Rs. 300.00. Orders to: Allied Book Centre, 34 Urdu Bazar, Lahore.

Commendation: from page 1

Rural Development Academy, were also equally crucial and helpful in making the event a success. Dr. Kazi Suleman Mamon (VP, SSSP and Congress Secretary), Dean, Faculty of Crop Production, SAU, deserves special appreciation for his tireless mental and physical efforts for architecting and executing the first ever soil Science Congress in Sindh. It would not be fair if we do not recognize the sincere, wholehearted and challenging role of Dr. Nisar Ahmad, President, SSSP in leading this uphill task.

We also acknowledge the generous contributions of sponsors from public sector (SAU, PSF, HEC, Sindh Agri. Deptt., PAEC) as well as private sector (FFC, Engro Chemicals, United Agro-Chemicals, Jaffar Brothers, Chawala International).

Pro

national and international journals and books.

Excellent and innovative research accomplishments of Dr. Qureshi have been acknowledged nationally and internationally by bestowing prestigious professional awards, including **Agha Hasan Abedi** Prize for Best Scientist of the Year (2000), President's Award for **Pride of Performance** (1997), **Norman Borlaug Award** (1994) by Government of Pakistan, and **Research Productivity Allowance** (2000-2001) by the Ministry of Science and Technology.

We pray for his good health and a prosperous retired life.

News and Views, for next issue of the Soil Science News, may be conveyed to:

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