

Welcome...

You are reading the tenth annual issue of *Better Crops South Asia*. This publication is released in the fourth quarter of each year, and follows a format similar to our flagship publication *Better Crops with Plant Food*.

Our 2016 issue is focused on 4R Nutrient Stewardship.

The research featured in this issue is a tribute to the scientific progress that is continually being made in the

fields and laboratories throughout South Asia. Once again, we at IPNI wish to congratulate and thank the many cooperators, researchers, farmers, industry representatives, and others who are working for the benefit of agriculture in South Asia.



A handwritten signature in black ink, appearing to read 'Terry L. Roberts'.

Dr. Terry L. Roberts, President, IPNI

IPNI Scholar Award Recipients (South Asia) - 2016

The International Plant Nutrition Institute (IPNI) has selected the winners of the 2016 Scholar Awards. A total of 36 graduate students, representing 14 countries, were chosen as IPNI Scholar Award recipients. Each winner receives the equivalent of US\$2,000. IPNI selected seven Scholars from the South Asia region whose details are provided below.

“The selection committee was encouraged by the number and quality of applications it received,” said Terry L. Roberts, IPNI President. “Many countries and institutions were represented. The students are doing impressive work and will contribute immensely to the field of plant nutrition,” said Roberts.

Graduate students attending a degree-granting institution located in any country within an IPNI regional program are eligible. The award is available to graduate students in science programs relevant to plant nutrition science and the management of crop nutrients including: agronomy, horticulture, ecology, soil fertility, soil chemistry, crop physiology, environmental science, and others.

Regional committees of IPNI scientific staff select the recipients of the IPNI Scholar Award. The awards are presented directly to the students at a preferred location and no specific duties are required of them. Funding for the scholar award program is provided through support of IPNI member companies, primary producers of nitrogen, phosphate, potash, and other fertilizers.

More information is available from IPNI staff, individual universities, or the IPNI website <http://www.ipni.net/awards>.



Ridham Kakar

Ms. Ridham Kakar, Dr. Y.S. Parmar University of Horticulture and Forestry, Nauni, Solan, Himachal Pradesh, India, is working towards her Ph.D. in integrated nutrient management. Her dissertation title is “*Integrated Nutrient Management Under Ginger-Cauliflower Cropping Sequence in North-West Himalayas.*” Ridham’s research has been undertaken to improve nutrient use efficiency, organic matter content, and optimization of fertilizer application. This research is working towards increased soil health and productivity and overall living standards for farmers. Her career goals are to continue with farmer-oriented research work in order to help the farming community with increasing their living standards.



Kiran K.R

Mr. Kiran K.R., Indian Agricultural Research Institute, New Delhi, India, is pursuing a Ph.D. in soil science and agricultural chemistry. His dissertation title is “*Mobilization of Soil Iron to Minimize Iron Deficiency Chlorosis of Soybean Under Ambient and Elevated CO₂ and Temperature Conditions.*” The objectives of Kiran’s research are to study the basis of iron (Fe) deficiency chlorosis in soybean genotypes, evaluate the effectiveness of different strategies to mobilize soil Fe and its impact on Fe deficiency chlorosis tolerance by soybean genotypes, and to study the effect of Fe mobilization strategy in enhancing bioavailability of Fe to soybean genotypes under ambient and elevated CO₂ and temperature conditions. After his Ph.D., one of Kiran’s goals is to conduct research on the transformation and dynamics of nutrients, especially in arid and semi-arid agro-ecosystems with respect to changing climate scenarios.



Rumesh Ranjan

Mr. Rumesh Ranjan, Indian Agricultural Research Institute, New Delhi, India, is pursuing his Ph.D. in genetics and plant breeding. His dissertation title is “*Genetic Analysis and Identification of QTLs Influencing Nitrogen Use Efficiency in Wheat.*” The objectives of Rumesh’s research are to identify the traits influencing nitrogen use efficiency, study the extent of variability existing for these traits in the germplasm, study the inheritance of traits influencing nitrogen use efficiency in wheat, and identify the putative QTLs for nitrogen use efficiency in wheat. Rumesh plans to disseminate the new era of technology to farmers, which will serve both them and their communities for economic prosperity and betterment as a whole.



Pragyan Paramita Rout

Ms. Pragyan Paramita Rout, Tamil Nadu Agricultural University, Coimbatore, Tamil Nadu, India, is pursuing her Ph.D. in soil science and agricultural chemistry. Pragyan’s dissertation title is “*Development and Standardization of Sensors for Soil Moisture Monitoring and Precision Nutrient Management for Growing Flower Crops Under Fertigation and Matric Suction Irrigation.*” Her research work aims at developing and standardizing various cost effective sensors for soil moisture monitoring and precision nutrient management (for flower crops in both greenhouse and field conditions). Upon completing her degree and pursuing a post-doctoral fellowship, Pragyan would like to build a career in precision agriculture using sensors for water management and nutrient management.



Vijayakumar Shanmugam

Mr. Vijayakumar Shanmugam, Indian Agricultural Research Institute, New Delhi, India, is working towards a Ph.D. in agronomy. His dissertation title is “*Potassium Management in Aerobic Rice–Wheat Cropping System.*” The objectives of Vijayakumar research are to find out the effect of rate, method, and time of potassium (K) application on growth and productivity of aerobic rice and wheat crops; assess the effect of K fertilization on grain quality and nutrient use efficiency of aerobic rice and wheat crops; estimate the residual effect of K fertilization on soil fertility; and work out the economics of different treatments. One of Vijayakumar’s future goals is to establish a career in agricultural research, with strong fundamentals in agronomy and soil science.



Arunbabu Talla

Mr. Arunbabu Talla, Indian Institute of Technology, Kharagpur, West Bengal, India, is earning a Ph.D. in agronomy. His dissertation title is “*Planting Time and Nitrogen Management for Improving Hybrid Rice Production under Changing Climate of Subtropical India.*” His research is focused on mitigating the adverse impact of climate change on hybrid rice production in sub-tropical climates, by addressing location specific agro-adaptation technologies. Mr. Talla’s long-term goals involve the improvement of sustainable agricultural productivity in farmers’ fields, through precision agriculture. This includes site specific nutrient management, measuring nutrient losses, and improving nutrient management plans for higher input use efficiency.



Abdul Rehman

Mr. Abdul Rehman, University of Agriculture, Faisalabad, Pakistan, is completing a Ph.D. in agronomy. His dissertation title is “*Exploring the Role of Zinc Nutrition in Yield Improvement, Grain Biofortification and Resistance against Abiotic Stresses in Wheat.*” The outcomes of this research will improve wheat productivity by encouraging zinc application in wheat and developing a cost effective technique. After completing his Ph.D., Abdul wants to pursue additional research in improving biofortification and resistance against abiotic stresses in rice, wheat, and chickpea through the application of micronutrients.

IPNI Appoints Potassium Program Director

The International Plant Nutrition Institute (IPNI) has appointed Dr. T. Scott Murrell as Director of its new Potassium Program.

For the past 20 years, Dr. Murrell has worked for IPNI (2007 to present) and its predecessor the Potash & Phosphate Institute (PPI; 1996 to 2007) as IPNI Director of the North America Program and PPI Regional Director of the Northcentral U.S. Program, respectively. Most recently, Dr. Murrell’s focus within the IPNI North American Program has been on the improvement of nutrient management within corn-soybean cropping systems, data management for soil testing and crop nutrient uptake, and soil potassium assessment. Dr. Murrell will continue his work with data management as that is an integral component of potassium plant nutrition and management.

“All IPNI scientists’ activities include agronomic programs that address potassium, nitrogen, phosphorus, and other plant nutrients as part of the Institute’s regional and global tactical plans,” explained IPNI President Dr. Terry L. Roberts. “Our addition of a Potassium Program Director completes our team of Directors that will have primary and global focus on each of the major nutrients.” 



Dr. T. Scott Murrell, Director of the IPNI Potassium Program.