भाकृअनुप
ICAR

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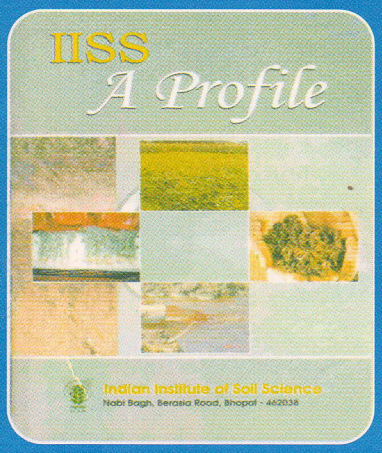
New Publications



In This Issue

Forth Coming Events

- STCR group meeting of research workers of different centers during Oct. 2008
- STCR regional workshops and trainings to the soil testing personnel of different states during Nov.-Dec. 2008.
- Model Training Course (MTC) on Efficient Use of On-farm and off-farm Resources for Sustainable Crop Production in Organic Farming during 11th - 18th December 2008

From the Director's Desk

Best Management Practices for Nutrient and Water Conservation and Efficiency in Agriculture

Best Management Practice (BMP) is a practical approach for conserving a farm's soil, nutrients and water resources without sacrificing the crop productivity. The ultimate aim of BMPs is to optimize plant growth and production. A team of farmers, researchers and extension workers decides the BMP for a particular soil-crop-management situation. Cropping systems, tillage systems and management options of nutrients, water, crop residue and pests are the key aspects for deciding the BMP. Conservation tillage, precision nutrient management, integrated pest management and conservation buffers are some examples of BMPs.

Conservation Tillage: At least 30% of the soil surface is covered with plant residue which reduces runoff and soil erosion, conserves soil moisture, helps to retain nutrients on the field, thus improves soil, water and air quality.

Precision Nutrient Management: Managing and accounting nutrient inputs to ensure nutrients supply to meet crop needs while reducing nutrient flows off fields. It also helps prevent excessive buildup of nutrient in soils and their movement into water bodies.

Pest and Disease Management: Various pest control methods for keeping insects, weeds and diseases below economically harmful levels.

Vegetation/Conservation Buffers: Grassed waterways/vegetation strips provide protective barrier by capturing potential pollutants that might otherwise move into surface waters.

Best Management Practices are specific to a particular soil and cropping system. They often include:

- Soil and plant analysis to diagnose soil fertility status and nutrient requirement
- Placement of nutrients for maximum plant availability
- Nutrient budgeting to match nutrient supply with crop removal
- Mapping and managing soil variability with respect to important soil fertility parameters among and within fields
- Synchronizing nutrient supply with plant demand
- Selecting genotypes and managing for higher yield and nutrient uptake
- Maintaining a buffer zone between the fertilized field and water courses
- Growing cover crops to retain nutrients for the next growing season
- Conservation tillage to minimize runoff and erosion

Erosion and run off controlling BMPs

A number of management practices and structures for controlling runoff and erosion are currently available for use. In some cases, there is a trade-off between reducing runoff and increasing deep percolation to groundwater. BMPs for managing surface runoff and soil erosion are listed below:

Conservation tillage: Cropping system that maintains at least 30% of the soil surface covered with residues after planting

Crop diversification: Crop rotation/sequence is designed to produce more crop residue

Delayed seed bed preparation: Crop residues are maintained on the soil surface for three to four weeks prior to planting the succeeding crop

Grass filter strip: Permanent grass strip is planted at the base of sloping fields or between the field and surface water bodies

Grassed waterway: Grassed channel provides a non-erosive outlet for runoff

Contour farming: Crops are planted on the contours of the land to reduce erosion

Strip cropping: Alternating strips of row crops and solid seeded crops are planted

Terrace: Earthen embankment is constructed across the slope to reduce slope length and runoff velocity

Sediment control basin: Basins are constructed to collect runoff and trap sediments

BMPs for fertilizer N

Fertilizer use BMPs involve application of right nutrient source at right rate, time and place and integration with agronomic BMPs helps to achieve the objectives of productivity, profitability, sustainability and safe environment. They include :

- Base N application rates on soil test and yield goals
- Credit the contribution oflegumes, manures and other organic wastes
- Synchronize application with crop demand and utilization
- Use slow release nitrogen fertilizers and nitrification inhibitors when soil conditions promote leaching
- Schedule irrigation to minimize leaching
- Diversify crop rotations to include crops that utilize deep residual nitrogen
- Place the fertilizer at right depth
- Use variable fertilizer application rates in variable fertility soils

Managing soil to reduce phosphorus (P) losses

Soil erosion from agricultural fields is a major contributor to nonpoint source pollution resulting in eutrophication of surface waters, lakes and streams besides loss of top soil as well as nutrients and pesticides.

Specific BMPs for fertilizer P and manure management that should be employed to protect surface water quality in many areas include:

- Soil erosion control
- Fertilizer recommendations based on soil testing
- Band placement below the soil surface or broadcasting and incorporation
- Differential fertilizer management in variable fertility soils
- Crediting phosphorus contribution from manures and other organic wastes
- Farm and or feedlot runoff control
- Conservation tillage and residue management
- Maintaining buffer (filter) strips

Recommendations for recycling manure nutrients

- Soil tests need to be carried out every 3 years to recommend integrated nutrient management practices
- Develop a baseline of manure nutrient content and quality
- Manure applications prioritized to fields that test low in P and K
- Manure application ahead of crops that will benefit the most from N such as a cereal crop rather than a legume
- The expected N credit for legumes and other N sources to be calculated. Do not apply manure at rates that exceed the crop's ability to utilize the total plant available nitrogen credit from all sources
- Manure to be applied at known and consistent rates, to cover the entire field uniformly
- Keep records of what, when, where and how much manure is applied to fields
- Limit manure applications on untilled fields and avoid manure applications to slopping, or eroding soils

BMPs for efficient use of irrigation water

Conversion to Sprinkler/Drip irrigation: The conversion of flood/furrow irrigation to sprinkler or drip irrigation can reduce labour costs, reduce the water required, make uniform irrigation and reduce irrigation induced erosion.

Polyacrylamide (PAM) : Polyacrylamide is a synthetic water-soluble polymer which when added to irrigation water can greatly reduce soil erosion and increase water infiltration.

Mechanical Straw Mulching: Straw mulching is a practice that can greatly improve yield and help control soil erosion, water runoff, and facilitate more water infiltration of the soil.

Laser Leveling: Dressing fields with laser leveling to a slope of 0.3 to 0.4 feet per hundred feet provides immediate benefits for surface irrigation. The uniformity of irrigation allows the conservation of water, less leaching in the wetter parts of the field, and improves crop performance.

Adoption of BMP conserves soil, water and nutrients besides saving on costly inputs of irrigation water and fertilizer nutrients and simultaneously promotes air and water quality in the area. There is a need to consolidate and promote the available BMPs in different soil-crop situations suited to farmers with different resource base. The BMPs should be built on the concepts of precision agriculture, site-specific nutrient management, organic recycling, conservation agriculture and other conservation measures. There is a need to renew research on BMPs for each soil-crop-climate situation for arriving at BMPs suited to the resource base of the farmers.

(A. Subba Rao)

Honourable Director General Visits the Institute

Director General, ICAR, releasing the Institute's publication

Honourable Secretary DARE and Director General,Dr.Mangala Rai visited the Institute on 2nd February 2008 and interacted with the institute's scientists inidividually. He enquired about each scientist's research work and advised new line of work in view of changing scenario of Indian agricuture. Later, he addressed the staff of the institute. In his address, Dr.Mangala Rai emphasised the need for research on consveration agriculutre in current agriculture situation. The honourable DG has stressed the concept of conservation agriculture as an integrated approach for arresting and reversing the downward spiral degradation of natural resources, decreasing cultivation costs and making agriculture more resource use efficient, competitive and sustainable.

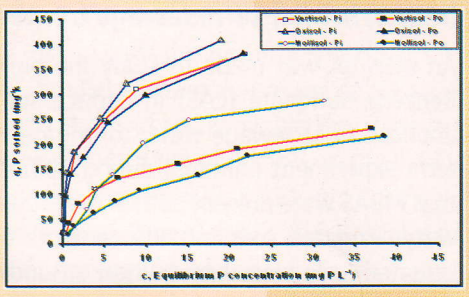
Research Highlights

Tillage Effect on Soil Aggregates and Organic Carbon Turnover

The results on different aggregate size classes and their soil organic carbon contents (SOC) obtained from the long-term tillage experiment indicated that the surface soil (0-5 cm) retained maximum SOC in no tillage (NT) followed by reduced tillage (RT) and mould-board tillage (MB) and minimum in conventional tillage (CT) whereas at 5-15 and 15-30 cm depths the difference in SOC contents of NT, RT and MB was not significant but was significantly higher than CT. For determining the location of SOC in soil, the soil samples were fractionated by slaking and wet sieving in four soil aggregate size classes (> 2 mm, 2-0.250 mm, 0.250-0.053 mm and < 0.053 mm). In all treatments and depths, maximum soil was retained in small macro-aggregates fraction (2-0.250 mm). The per cent silt plus clay size fraction was not influenced significantly by tillage and nitrogen levels. The per cent macro-aggregates distribution showed increasing trend with N levels. The differences in large (> 2mm) and small (2-0.25 mm) macro-aggregates of N100% and N150% were not significant while these fractions at N50% were less than those at N150%. The SOC decreased with decreasing aggregate-size classes in all treatments and soil depths. The SOC of large (>2 mm) macro-aggregates at all soil depths and small (2-0.25 mm) macro-aggregates at surface (0-5 cm) soil was significantly higher in NT than in CT. The SOC increased with nitrogen in general up to N100% levels while declined at lower soil depths and finer fractions.

Differential Behaviour of Organic and Inorganic Phosphorus Sorption in Soils

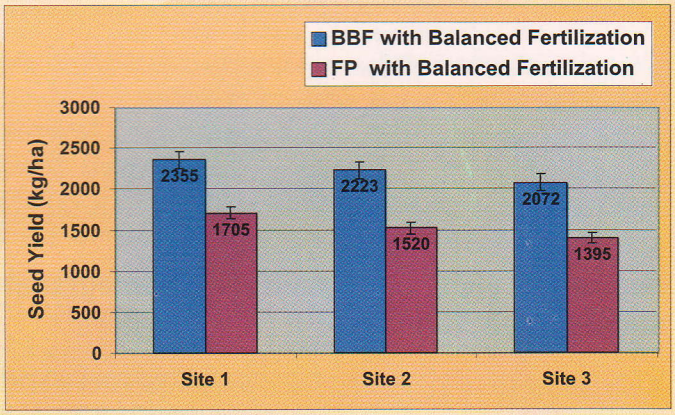
Comparative studies on sorption behaviour of inorganic-P (Pi as KH_2PO_4) and organic-P (Po as $C_6H_{18}O_{24}P_6$) in three contrasting soils viz., Vertisol (Bhopal), Oxisol (Dapoli) and Mollisol (Pantnagar) showed that the organic-P sorption was consistently lower than the inorganic-P sorption in all three soils. In general, the P sorption maxima (b), bonding energy constant (k) and standard P requirement (SPR) derived from Langmuir isotherms were relatively lower for organic-P compared to inorganic-P. The lower sorption of organic-P vis-à-vis inorganic-P in different soils was primarily through a decrease in either sorption maxima (b) as in Mollisol, bonding energy constant (k) as in Oxisol or both b and k as in Vertisol. The sorption of both inorganic and organic P in different soils followed the order: Oxisol > Vertisol > Mollisol.



Sorption isotherms of inorganic and organic P in contrasting soils

Integration of Broad Bed Furrow (BBF) and Balanced Fertilization

Three field trials conducted in Rangai village, Vidisha district to demonstrate the beneficial effect of integration of farmer friendly drainage techniques and farmers practice of land configuration with balanced fertilization on soybean showed that the integration of BBF with balanced fertilization



Effect of integration of BBF and balanced fertilization on soybean seed yield on waterlogged fields.

produced 38% higher soybean yield at site 1, 46% higher yield at site 2 and 48% higher yield at site 3 as compared to integration of farmers' practice with balanced fertilization. The pooled data of three sites indicated that the integration of BBF with balanced fertilization produced 44% higher soybean yield over the integration of farmers' practice of land configuration with balanced fertilization.

Soybean crop stand at 35 DAS on broad beds and flat bed.

Measurement of Methylene Blue Active Substances (MBAS) in long-term sewage treated soil

An attempt was made to study the build up of Linear Alkyl Benzene sulfonate (LAS) in surface soil due to continuous application of sewage water to irrigate wheat crop in a long term experiment (initiated during 2002). The results showed that MBAS were present both in the ground water and sewage water irrigated soils but the contents of MBAS in sewage-irrigated soils were higher than groundwater irrigated soils. The results suggest that there was a considerable build up of methylene blue active substances (including LAS) in the sewage treated soils. The increase in MBAS ranged from 9.24ppm to 15.71ppm, indicating 74.99 to 115.03% increase in MBAS in the soil due to sewage irrigation. Further, the build up was more in FYM treatment, in both groundwater and sewage water treated plots which possibly contributed additional organic and inorganic anions in the soil.

MBAS from long term sewage and ground water treated plots

Treatments	MBAS (ppm) in soil		
	Ground water treated soil	Sewage water treated soil	% increase in MBAS content due to sewage
Control	10.44	23.26	122.86
100% RDF	12.33	21.57	74.99
50% RDF	12.49	25.43	103.54
100%RDF+FYM (10t/ha)	13.66	29.37	115.03
LSD (0.05)	1.87	1.87	

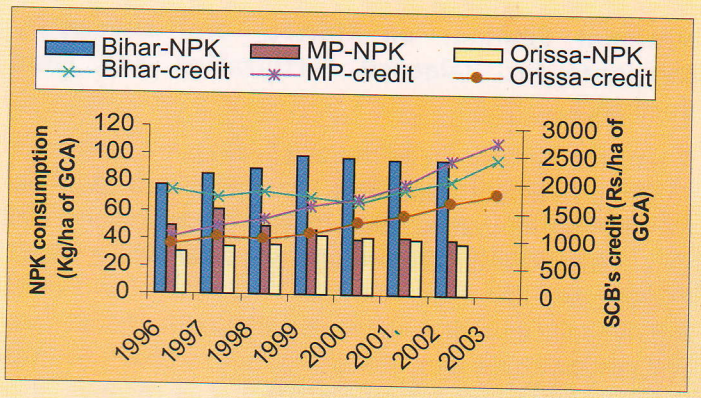
Improving yield and quality of pomegranate under organic farming

It has been observed from the study that the highest fruit yield was recorded in integrated nutrient management system (7.98 kg plant^{-1}) followed by organic and inorganic nutrient management systems, which were at par and was the lowest in control (4.97kg plant^{-1}.). The fruit quality parameters such as sugars, total soluble sugars (TSS) and ascorbic acid content increased significantly with integrated, organic and inorganic alone, whereas, juice acidity and tannin content did not vary significantly with different nutrient management systems. The TSS in different systems was in the range of 15.5 to 17.4 Brix0. The maximum TSS was recorded with cattle dung manure application (17.4 Brix0) and was minimum in control (15.5 Brix0). Higher accumulation of ascorbic acid was recorded in integrated (17.9 mg/ 100 g) followed by organics and inorganic systems and was the lowest in control (16.0 mg/ 100g). Juice acidity in pomegranate fruit was reduced as a result of application of organic, integrated and inorganic systems, while, it was maximum in control.

Ailing Agricultural Productivity in Economically Fragile Region of India: An Analysis of Public Investment and Farmers' Capacity

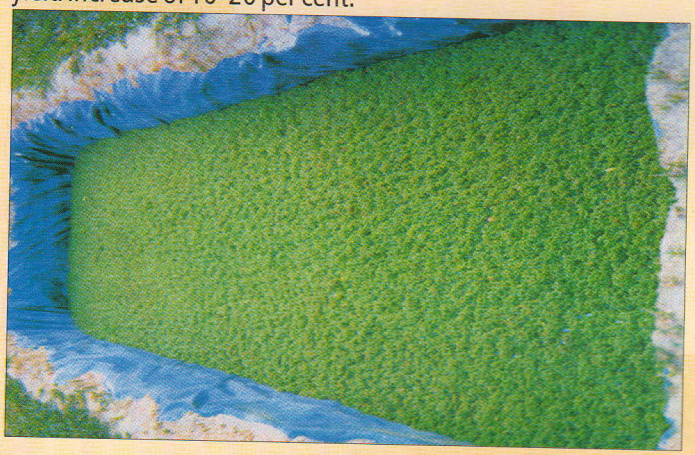
Analysis of production performance of major crops in 3 poorest states (Bihar, M.P. and Orissa) during post-green revolution period (1970-1989) and post economic liberalization period (1990-till date), exhibited very gloomy picture. In Bihar, except in wheat, area under most of the crops declined and growth in yield of all the crops has decelerated during 2nd period. In M.P., area under soybean exponentially increased at the expense of jowar, sesamum, even groundnut. However, except in maize & soybean, no crop realized growth in yield of even 2% p.a. In Orissa, agriculture is highly diversified as except rice, no single crop occupy >2% of GCA. Area under most of the crops is declining and growth in yield became negative for all crops after 1990s. Area under food grains (FG) in all 3 states has either stagnated or declined in nineties. Although, total production of FG has increased by 27% in Bihar, 51% in M.P. and about 15% in Orissa, but, annual growth in overall yield has decelerated. In Orissa, agriculture is in big turmoil, as growth in area, production and yield became negative.

In these states, irrigation has also not made much headway, as irrigated area is as low as less than 30% in M.P. and Orissa. In Bihar, although, % irrigated area is about 60% but its reliability is under question. Consumption of NPK in selected states is highly skewed and very low (35-45kg/ha) in M.P. and Orissa and 95 kg/ha in Bihar. Similarly, disbursement of institutional credit in these poor states (Rs. 1800-2500/ha) has remained laggard and sluggish till mid-1990s. While developed states enjoyed more than double of this credit amount. Unfortunately, credit-deposit ratio in 3 states ranged between 0.24-0.50, showing that even saving of the rural areas are either diverted to urban area or to the industrial sector. Therefore, there are many factors other than the improved technologies, which are critical for sustainable growth in agriculture of these states.



Azolla application for Rice in North-East

All India Network Project on Biofertilizers, IISS, Bhopal, at one of its centres, Assam Agricultural University, Jorhat has developed technology for round the year homestead cultivation of Azolla caroliniana , an aquatic fern, as a cost effective nutrient formulation for rice in the North-East region which is receiving wide acceptance by the farming communities of Assam. Azolla is grown in polythene (0.5 mm) lined pits (1m x 2 m x 0.2 m) and multiplies in 15-20 days. Small quantity of dry powdered cowdung, single super phosphate and muriate of potash is added to each pit along with Azolla inoculum. For continuous harvest of Azolla 10-15 number of above pits are required. The cost of each pit is approx. Rs. 100/- including material and manpower and can be used for 2 years. After 3-4 weeks of growth and formation of mat, Azolla is incorporated in soil. Again after 7-8 weeks, the Azolla covers the field and requires a second incorporation. About 2-3 tonnes of Azolla can be supplied in each bigha of rice field with a supplementation of 4-8 kg N per crop per rice crop (20-40 kg N/ha) with an average yield increase of 10 20 per cent.



Optimizing Rate of Boron Blending with NPK for Groundnut

Groundnut is an important crop of Gujarat but yields are low in calcareous soil. Crop suffers with boron deficiency. Since boron is required in small amounts so uniform application of small dose of boron fertilizer also causes problems and uneven application creates toxicity in plants. Blending of boronated fertilizer is important. Studies were under taken to optimize blending of Granubor II (15% B) with NP/NPK by applying boron at the rate of 0.1, 0.2, 0.3, 0.45, 0.60 and 0.75% (W/W) to fulfill the boron requirements of crop. Boron application significantly increased the pod yield over no boron treatment. Maximum pod yields of 3056 kg/ha, (24%) and of haulm 6804 kg/ha, (21%) were recorded at 0.30 % B equivalent granubor blending over the yield obtained 2431 kg pod ha^{-1} in boron control treatment. Basal application at the rate of 100 % was found better than top dressing at both the sites. The effect of 0.2% and 0.3% blending of boron was on par but blending of higher rate of boron from 0.45 to 0.75% on equivalent NP/NPK dose basis decreased the pod yield by 278-456 kg ha^{-1} compared to maximum yield achieved with 0.3% B blending. In general, basal application of 0.2-0.3% blending of granubor II with NP/NPK was found optimum for enhancing productivity

Optimizing Zinc Fertilization to Castor Based on Soil Test

Zinc fertilization is generally practiced based on soil categorization in the deficient or sufficiency level. Precise zinc application based on soil test may be beneficial. Therefore, field studies were conducted at 15 locations around Hyderabad. The field sites had DTPA-Zn in the range of 0.2-0.4, 0.4-0.6, 0.6-0.80, 0.80-1.0 mg kg^{-1} soil. In each site zinc was applied at 1.1, 2.2, 3.3 and 4.4 kg ha^{-1}. Studies showed that response of castor to zinc levels varied with status of soil available zinc. Per cent response to zinc was found maximum at 76.85% to the 4.4 kg Zn ha^{-1} applied and decreased to 54.78, 34.91 and 6.56% as soil DTPA Zn status increased from 0.4-0.6 to 0.6-0.80 and 0.80-1.00 mg kg^{-1} soil. Application of 2.2 kg Zn ha^{-1} gave optimum response of 28.08 to 34.91 % at 0.6-0.8 mg kg^{-1}. Application of zinc at high fertility status did not show any significant increase in yield. Thus, as the zinc fertility increases, the magnitude of response decreased to the levels of applied zinc. Thus zinc fertilization recommendation should preferably be made on the basis of low, marginal and adequate fertility status rather than deficient or sufficient basis to make precise zinc fertilization, get higher benefits without any loss in over all productivity.

Impact of Potassium Deficiency on Hybrid Maize under Long Term Fertilizer Use

The growing of crop without K or supplied in less quantity of K resulted in a decline in available status of K in soil. In the absence of K in fertilizer schedule, Alfisols are the first, which showed sharp decline in available K status followed by Inceptisol and Vertisols. In Alfisols continuous growing of finger millet and maize for 17 years at Bangalore resulted in a decline in available K status from 123 mg kg^{-1} (initial) to 109 mg kg^{-1} in 50% NPK, 52 mg kg^{-1} in 100% NP and 59 in 100% N and 71 mg kg^{-1} in control plot, whereas application of 100% NPK and NPK + FYM resulted an improvement in available K status compared to initial. The results revealed that decline/build up in K status was dependent on initial status, soil type, productivity and cropping system.

Integrated Nutrient Management for Maize in Punjab

AICRP on STCR,IISS, Bhopal at its centre at PAU, Ludhaina has developed site-specific nutrient recommendations for maize (variety PMH 1) and wheat (variety PBW 502) sequence, under INM involving use of FYM and inorganic chemical fertilizers. . The results showed that about half of the nitrogen contained in FYM was available to maize. For a yield goal of 4 t ha^{-1}, each tonne of soil organic carbon in 0-15 cm plough layer supplied an average of 4.75 kg fertilizer N ha^{-1} and for a yield goal of 5 t ha^{-1}, average of 6.47 N kg ha^{-1}.

Balanced fertilization for Turmeric in A.P.

The STCR trials carried out revealed that for a crop of Turmeric with a production of 40 q ha^{-1}, the fertilizer dose of N, P_2O_5 and K_2O of 84, 62 and 44 kg ha^{-1} is required for soils with the available nutrient status of 200 kg N, 10 kg P and 270 kg K ha^{-1} at Jagtial, Karimnagar, A.P. while for a production of 35 q ha^{-1} fertilizer dose of 102, 92 and 64 kg N, P_2O_5 and K_2O are required in soils with fertility status of 160 N, 10 kg P and 420 kg K ha^{-1} at Utukur Kadapa district, A.P.

Awards and Honours

- Dr K.M Hati received the Associate Fellowship of National Academy of Agricultural Sciences (NAAS) for the year 2008.

Events

Workshop of the ICAR Ad-hoc Scheme

Organized the Concluding Workshop of the ICAR Ad-hoc Scheme on "Delineation and mapping of nitrate contamination in soil and water in highly fertilized and intensively cultivated districts of the country", during March 7-8, 2008 at IISS, Bhopal. Apart from the research team of IISS, Bhopal, scientists from other centers, namely, PAU, Ludhiana; Dr.PDKV, Akola; College of Agriculture (ANGRAU), Bapatla; BCKV, Kalyani and TNAU, Coimbatore participated in the meeting. Dr. Sudhir Kumar Ghosh, Ex. Additional Director, CPCB, New Delhi was the Chief Guest of the workshop.

National Seminar on "Micro- and Secondary Nutrients for Balanced Fertilization and Food Security"

A National Seminar on "Micro- and Secondary Nutrients for Balanced Fertilization and Food Security" sponsored by the Ministry of Agriculture, Department of Agriculture and Cooperation (DOAC), Govt. of India was organized by Project Coordinating Unit (Micronutrients), IISS, Bhopal at Anand Agricultural University, Anand on 11-12 March 2008 to visualize the extent of prevailing micro and secondary nutrient deficiencies occurring in the various parts of the country and to devise management practices to have better crop production. The Assistant Director General (Soils), ICAR, Dr. P. D. Sharma inaugurated the seminar and many researchers from various ICAR institutes and SAUs and representatives from fertilizer industries participated in the seminar. Finally a panel of experts brought out the recommendations of the national seminar.

Inaugural function of "National Seminar on Micro- and Secondary Nutrients for Balanced Fertilization and Food Security"

STCR Regional Workshops and Trainings

Organized STCR regional workshops-cum-trainings to the soil testing personnels of Eastern, Northern and Western states of India during 21-22 February 2008, RAU, Pusa, Bihar ; 14-15 March 2008,GBPUAT, Pantnagar ; and 21-22 May 2008, MPKV, Rahuri, respectively.

Organized user-friendly software training to all the incharges of STCR centers for developing fertilizer prescriptions under INM and also for development of prediction equations for cropping systems during June 2008.

Launched STCR website "stcrres.in" during the month of June 2008.

Prepared GIS based Tehsil level soil fertility maps of the state of Marashtra, Tamil Nadu, Chattishgarh, Punjab, Haryana, Gujarat and Himachal Pradesh.

Short-term Training on Soil Fertility Evaluation

A 10-day short-term training on "Soil Fertility Evaluation and Fertilizer Recommendation" for B.Sc. (Ag.) students of Allahbad Agriculture Institute (DU) was organized by the Division of Soil Chemistry and Fertility during 16-25 June, 2008. Twelve students participated in this training programme.

Farmers' Meet Programme

Under the ACIAR project in collaboration with BAIF, Bhopal, a "Farmers' Meet Programme" was organized at Rangai (Vidisha district) and Turkipura (Rajgarh district) villages on February 19 and 20, 2008, respectively. During the meeting, both the host and non-host farmers visited the demonstration trials of wheat on Integrated Nutrient Management. Project scientists explained the farmers about the advantages of balanced and integrated nutrient management in improving the productivity of soybean-wheat system on black soils deficient in multi-nutrients.

Farmers visiting the demonstration trials at Rangai village.

Farmers and project scientists visiting the demonstration trials at Sanchi village

International Women's Day

The International Women's Day was celebrated on 8th March 2008. The Chief Guest of function was Smt. Krishna Kanta Tomar, Chairperson, Rajya Mahila Ayog and the Guest of honour was Smt. A. Bhulakshmi Devi. Other guests who graced the occasion were Smt. Reeta Prakasham, Principal of Maharishi Centre for Eductional Excellence, Bhopal and Smt. Shaesta Akhtar, Manager SBI, CIAE Branch, Bhopal. Various competitions i.e., Rangoli, extempore speeches and musical chairs were organized.

Sports

Mrs. Babita Tiwari of our institute won gold medals in shot put and Javelin and bronze in high jump and was declared the third best women athlete in the central zone.

Participation in Extension Activities

The staff of our institute participated in the 'Krishi Mela' at KVK, Ujjain (1-2 February, 2008); "Pusa Krishi Vigyan Mela" at IARI, New Delhi (21-23 February, 2008) and "District Level Krishi Mela" at Hoshangabad (28 May - 1 June, 2008) and demonstrated the technologies developed by our institute. Further, live demonstration of vermicomposting, phosphocomposting and NADEP composting was also arranged.

Coordinated the visits of the 55 farmers from Raghongarh Madhya Pradesh on 31/01/2008, 50 farmers from Harda Madhya Pradesh on 11/02/2008, 48 farmers from Office of Assistant Director Horticulture, Dhar on 05/03/2008.

Ujjain

New Delhi

Hoshangabad

New Externally Funded Projects

The NAIP unit under ICAR has approved the following three projects under the Component 4 (Basic and Strategic Research in the Frontier Areas of Agricultural Sciences) at IISS, Bhopal for the period 2008-12.

- "Assessment of quality and resilience of soil in diverse agro-ecosystems." (IISS, Bhopal as a Lead Center)
- "Nano-technology for enhanced utilization of native-P by plants and higher moisture retention in arid soils" (IISS, Bhopal as a cooperating center)
- Soil organic carbon dynamics vis-a-vis anticipatory climate changes and crop adaptation strategies (IISS, Bhopal as cooperating center)

New Appointments

Sh.Kumar Vivek, Administrative Officer, joined the institute on April, 30,2008.

Promotions

Dr K.N. Singh,senior scientist promoted to Principal Scientist w.e.f. Ist Dec. 2006.

Dr M.C.Manna senior scientist promoted to Principal Scientist w.e.f. Ist March 2007.

Dr A.B. Singh senior scientist promoted to Principal Scientist w.e.f.Ist March 2007.

Smt. Babita Tiwari, UDC, promoted to Assistant on 15th May 2008.

Transfers

Dr S. Elamathi, Scientist Sr. Scale transferred to Allahabad Agricultural Institute, Allahabad on 31st May 2008.

Distinguished Visitors

- Dr Mangala Rai, Secretary DARE & Director General ICAR, visited the institute on 2nd February, 2008 and interacted with the Scientists.
- Dr. Neal Menzies, Professor, University of Queensland, Australia, Visited IISS, Bhopal during 18-23 February 2008 to review the progress of the ACIAR project.

Scientists' Participation in Conference/Seminar/Training/Group Discussion

Name	Programme	Venue	Period
Drs A. Subba Rao, M.C. Manna, K. S. Reddy, Y. Muralidharudu and Tapan Adhikari	95th Indian Science Congress	Andhra University, Visakhapatnam.	January 3- 7, 2008
Dr Tapan Adhikari	National seminar cum-training on high resolution imaging in agricultural research	PAU, Ludhiana.	January 9-23, 2008
Dr S. Ramana	MDP Workshop on Policy and Prioritization, Monitoring and Evaluation (PME) Support to Consortia-based Research in Agriculure.	NAARM, Hyderabad	June 17-21, 2008
Drs A. B. Singh & A. Subba Rao	Participated in the seminar on " Status of Medical Biotechnology Research in the State of Madhya Pradesh".	BMHRC, Bhopal	February 14-16, 2008
Drs M. V. Singh and S. K. Behera	National Seminar on Micro- and Secondary Nutrients for Balanced Fertilization and Food Security	Anand Agricultural University, Anand	April 2-4, 2008
Dr M. V. Singh	6th New Ag International Conference	Hotel Taj, New Delhi	April 2-4, 2008
Drs A. Subba Rao. Blaise D Souza, K.M. Hati and Tapan Adhikari.	Attended the Foundation Day and Annual General Body meeting of NAAS	NASC, New Delhi	June 4-5, 2008

Editors: Dr. R.S. Chaudhary and Dr. S. Ramana

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