ICAR-IISS Newsletter

Volume 21, Number 2 | July - December 2018

In this issue

Coming Up
Foundation day
16 April 2019

International Decade of Soils 2015-2024

From the Director's Desk

Be the Solution to Soil Pollution

In India, most of the cultivated land is facing one or more kind of degradation stresses. In this, soil pollution is one of the most sensitive issues today due to enhanced industrialization and urbanization. Pollution of soil reduces the crop yields by 15 to 25%. Keeping this in view, the FAO recently organized "Global Symposium on Soil Pollution" during 2-4 May, 2018. This was also the theme of World Soil Day (5th December) 2018. To combat it and to develop an effective action plan for remediation of such areas, there is a need to have first-hand information on the status of soil pollution in the country. Although sporadic information generated from some parts of the country indicate the build-up of pollutants in agricultural lands, however, a systematic and comprehensive information on the extent of soil pollution and its impacts on other functional areas is very much required. The Central Pollution Control Board has identified critically polluted industrial areas and clusters or potential impact zones based on its comprehensive environmental pollution index. Forty-three such critically polluted zones have been identified in 16 states in India. Among the 43 affected sites identified, 21 sites exist in four states namely, Gujarat, Uttar Pradesh, Maharashtra and Tamil Nadu.

Several technologies have been developed for remediation of polluted soils based on the principles of clean-up, detoxification and risk minimization. All of these technologies have both advantages and disadvantages in respect of the extent of applicability, side-effects on other components of environment, ease of adoption, speed and cost effectiveness of remediation. Among these, removal of contaminants and the risk minimization are the major approaches for heavy metal polluted soil. Degradation to non toxic or less toxic compounds is the common approach for soils polluted with organic pollutants. Use of waste products from agriculture, industries, cities etc. have also exhibited their potential in minimizing risk from pollutants.

Besides above, different plants and microorganisms have also been found effective for remediation of polluted sites with varying degree of success. Emerging techniques such as nano technology (also called nano-remediation) have potential for conversion, degradation and detoxification of pollutants. Nano-particles have unique properties that enable pollutants to reduce electrochemically and transform catalytically to degrade or convert them into non-toxic or less toxic forms.

Therefore, adoption of different approaches as mentioned above for remediation and management of polluted soil is extremely important. Besides, certain norms or provisions regulating permissible levels of emissions, release or addition of pollutants are needed.

Ashok K. Patra

Research Highlights

Productivity of maize under integrated plant nutrient supply modules

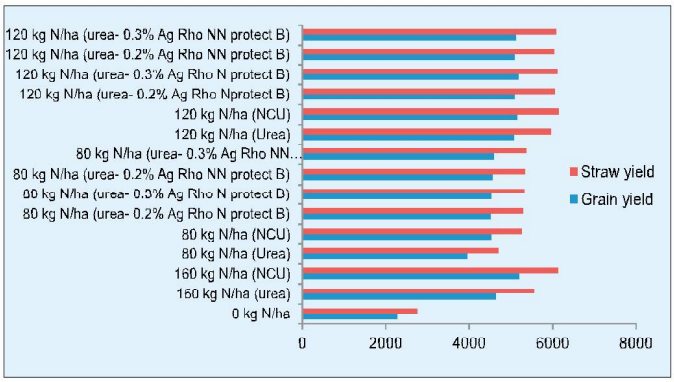
Twelve INM combinations of fertilizers (NPK), farmyard manure (FYM), poultry manure, urban compost, maize residue (MR), glyricidia loppings and soil test crop response (STCR) based fertilizer dose with target yield 5.0 t ha^{-1} have been investigated. The crop yield was improved with 75% NPK of STCR dose along with FYM @ 5 t ha^{-1}. It was succeeded by integration of 75% NPK + poultry manure @ 1 t ha^{-1} as compared to general recommended dose and 100% NPK alone. The response to urban compost and MR @ 5 t ha^{-1} respectively was nearly equal with their application along with 75% NPK of STCR based fertilizer dose. Yield were significantly lower with application of organic sources of nutrients alone.

Balance use of nutrients sustained crop productivity and soil health

Long term fertilizer experiment's results revealed that application of fertilizer not only increased productivity and production but also helped in controlling the CO_2 concentration in atmosphere through carbon sequestration in plant biomass. The highest carbon sequestration (272 kg $ha^{-1}y^{-1}$) was recorded with application of NPK+FYM. Application of fertilizer @ 120 and 150 kg ha^{-1} also sequestered carbon @ 249 and 272 kg $ha^{-1}y^{-1}$. Thus, use of fertilizer not only sustained crop productivity by assimilating more CO_2-C from atmosphere but also enhanced carbon sequestration and improved soil health.

Effect of Ag Rho N and Ag Rho NN formulations on crop performance

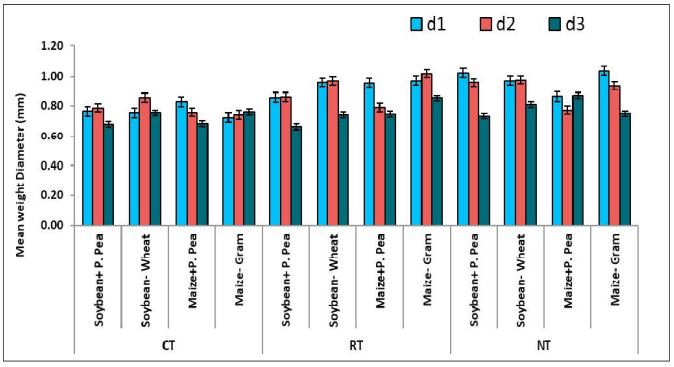
Effect of different formulations *viz*. Ag Rho N and NN was tested on wheat (Malwa shakti) crop grown during *rabi* season (2017-18). The highest grain yield of wheat was recorded with application of 120 kg N along with 0.3% Ag Rho NN protect B (T15: 5198 kg ha^{-1}). The response of Ag Rho N or NN protect B was not significant with respect to wheat grain yield as even neem coated urea and all other combinations of the Ag Rho were statistically at par with each other. A similar trend was observed for straw yield which varied between 2773 and 6132 kg ha^{-1}.



Effect of N sources and doses on wheat grain and straw yield

Soil aggregation as influenced by different tillage and cropping system

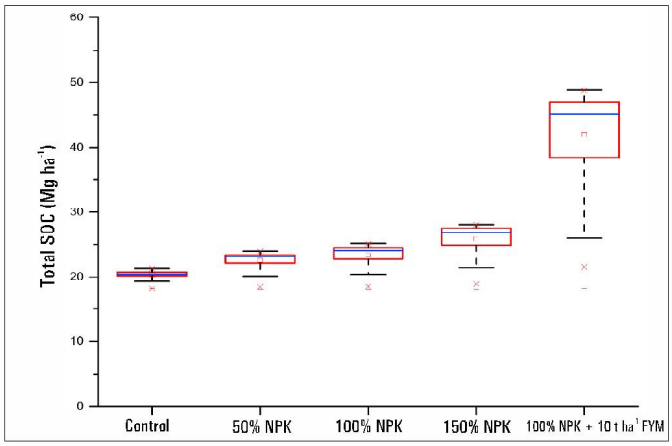
After 7 crop cycles under different tillage and cropping system, mean weight diameter (MWD) was affected significantly by the interaction of tillage × cropping system × soil depth. Across the different tillage, no-tillage (NT) had larger MWD (0.97 mm) than reduced tillage (RT) (0.93 mm) and conventional tillage (CT) (0.77 mm). Cropping system under RT and NT had larger MWD at 0-5 cm soil depth. The largest MWD was recorded for maize-gram cropping system (1.04 mm) and lowest was observed in maize + pigeon pea (0.87 mm) cropping system. Soil aggregation improved under NT and RT compared to CT.



Effect of different tillage and cropping system on mean weight diameter (mm) at different soil depths (d1= 0.5 cm; d2= 5-15 cm; d3= 15-30 cm)

Soil carbon sequestration potential under different nitrogen fertilization and manure management practice in Vertisol of central India

During 100 years of simulation, regardless of N and FYM management practices, SOC stock increased up to 62 years under 0% NPK, 69 years in N50%, 71 years in N100% and 86 years in 100%NPK + 10 t FYM. Further, it was observed that SOC saturation level reached 19.05 Mg ha^{-1} in the control, 21.08 Mg ha^{-1} in the 50% NPK treatment, 23.10 Mg ha^{-1} in the 100% NPK treatment, and 46.50 Mg ha^{-1} in the 100% NPK + 10 t ha^{-1} FYM treatment.

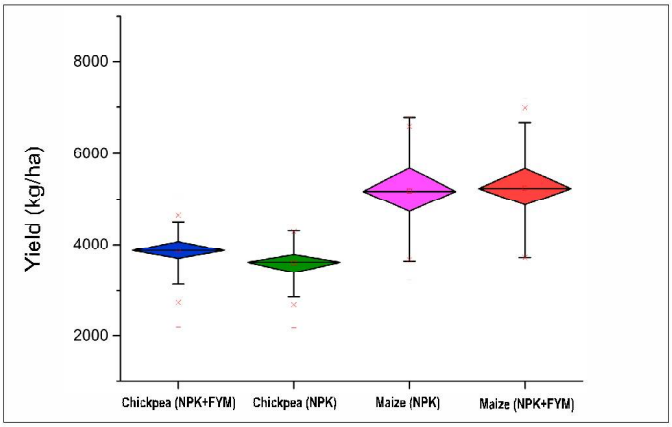


Soil total C stock (Mg ha^{-1}) under different management practices

Productivity of maize–chickpea cropping system under different nutrient management in MP.

APSIM crop model was executed grid wise (0.25^0 × 0.25^0) to simulate crop yield for maize-chickpea rotation over the Madhya Pradesh state. For this, grid-wise information on soil, weather and crop was collected for Madhya Pradesh state. Average simulated chickpea yield for Madhya Pradesh state were estimated 2 t ha^{-1} and 2.1 t ha^{-1} under 100% NPK and 100% NPK+5 t ha^{-1}, respectively; whereas maize yield were reported 5.1 t ha^{-1} and 5.4 t ha^{-1} for the same treatments. However, yield distribution showed that under the 100% NPK+5 t ha^{-1}

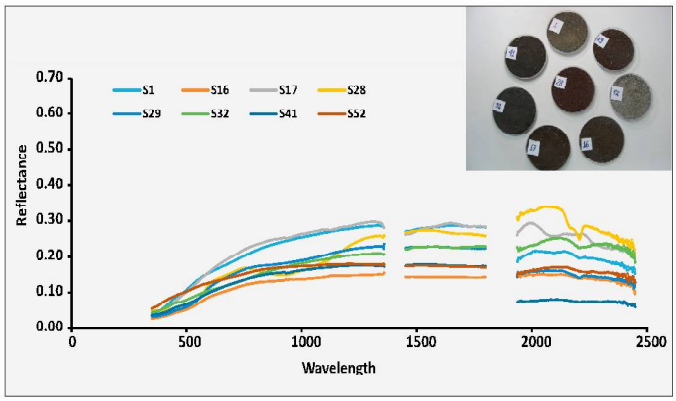
FYM treatment, yield is skewed towards higher side compared to 100% NPK.



Crop yields under different nutrient management in MP

Soil spectral information for Vertisol in soybean-wheat cropping system

Spectroscopic measurements for rapid assessment of soil health is need of the hour as these spectra encode information on the inherent composition of soil, which comprises of minerals, organic compounds and water. Therefore, for quantification of spectra based soil health, 230 geocoded surface soil samples were collected from soybean-wheat cropping system of Vertisol. A very high soil and spectral variability was observed in the region. soil pH, clay content and soil organic carbon varied from 6.5 to 8.5, 25 to 48% and 0.3 to 1.01%, respectively.



Calibration of APSIM model for pigeon pea in central India

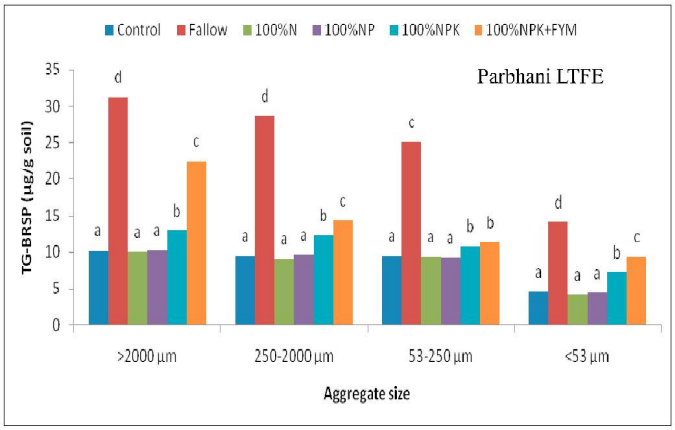
Crop phenotypic coefficient were generated for two pigeon pea cultivars *viz.* ICPL-87119 and TJT-501 for calibration of APSIM model. These coefficients were used to simulate crop biomass, grain yield and leaf area index (LAI) of both cultivars. It was observed that there was a good correlation between observed and predicted total dry matter (R^2= 0.97, 0.98), and LAI (R^2= 0.97, 0.98) for ICPL-87119 and TJT 501, respectively. There was also a good correlation between observed and predicted value of flower initiation, time to reach 50% flowering, start and end of grain filling, physiological maturity and grain harvesting.

Energy budgeting and productivity under organic production system

The energy input and output, energy use efficiency and energy productivity of different crops (soybean, wheat, mustard, chickpea and linseed) were calculated. The highest energy use efficiency and energy productivity were recorded under the application of 100% organic treatment followed by 75% organic + innovative, 75% organic + 25% inorganic as compared to 50% organic + 50% inorganic and 100% inorganic treatments. Among the different crops, wheat recorded the highest energy use efficiency.

Effects of long term use of fertilizer and manure on soil functional diversity and nutrient supplying capacity under different soils and cropping system

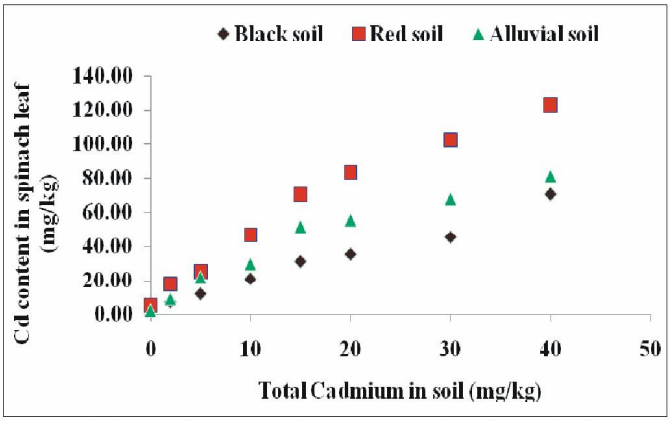
The effect of long-term use of farmyard manure (FYM) and inorganic fertilizers in Inceptisol (Rice–Wheat-Jute rotation) and Vertisol (Soybean-Safflower) was investigated for aggregate-glomalin content in the soil samples of LTFE Barrackpore and LTFE Parbhani. The targeted treatments are fallow, control, 100% N, 100% NP, 100% NPK, 100% NPK + FYM. Regardless of soil type, fallow treatment showed significantly higher TG-BRSP over other treatments. Highest TG-BRSP was recorded in fallow treatment and in soil aggregates of size >2000 µm followed by 250-2000 µm, 53-250 µm and < 53 µm in both Barrackpore and Parbhani LTFE soils. However, there was no significant difference between control, 100% N and 100% NP treatments in Parbhani LTFE soil.



Total glomalin bradford related soil protein (TG-BRSP)

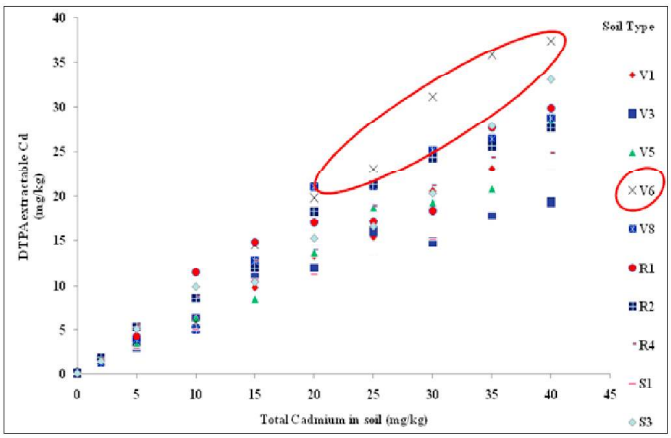
Critical limits of Cd for major soil orders of India

A study conducted to derive critical limits of Cd for Alfisol, Vertisol and Inceptisol of India, revealed significant reduction in spinach yield over control with increasing levels of Cd in soil and the effect was more pronounced in Alfisol (Ranchi) followed by Inceptisol (Kanpur) and Vertisol (Indore). The average percent reduction in dry biomass of spinach leaf at the highest level of cadmium contamination (40 mg kg^{-1}) over control after three crop cycle was 43.67, 39.19 and 26.31% in Alfisol, Inceptisol and Vertisol, respectively. Further, the plant accumulation of cadmium was also increased with increasing levels of cadmium in all the 3 soil types. At their corresponding levels, cadmium accumulation in spinach biomass leaf was more in lateritic soil followed by alluvial and black soil. The transfer coefficient value for cadmium was significantly high in lateritic soil (4.87) followed by alluvial (3.22) and black soil (2.32).



Cadmium levels on cadmium content in spinach leaf

Significant linear relationship were observed between the different extractable content (0.01M $CaCl_2$,1M $CaCl_2$, DTPA and 0.43M HNO_3) and spinach leaf Cd content with relatively low R^2 of 0.846 for 0.01M $CaCl_2$.



DTPA extractable Cd as influenced by major soil properties of black soil

Among the Vertisols having variation in soil texture, pH, and organic carbon content; the extractable content of Cd in soil was significantly higher in soil having low pH and organic carbon content (V6).

Rehabilitation of municipal waste dumping ground

The enormous waste generated in Bhopal city has been deposited at landfill site spread over 52 acres of land in Bhanpur village without following scientific method. An effort was made to reclaim/rehabilitate a recently closed Bhanpur municipal dump site through stabilizing and covering the land with vegetation through various interventions tackling the adverse conditions such as high heat and toxic gas generation in the rhizosphere. Vegetation with several species of shrubs and trees has successfully been established on the MSW dumping area.

Conversion of MSW dumping area of Bhanpur to green belt

Climate vulnerability for districts of Madhya Pradesh under current and projected climate scenarios

An assessment was done to study the overall implications of climate change on climate vulnerability for 51 districts of Madhya Pradesh to identify the vulnerable districts to climate change in current (1981 to 2010) and projected climate scenarios RCP 4.5 and RCP 8.5, mid century (2021-2050) and end of century (2071-2100) by using indices for

precipitation and temperature calculated from Cordex South Asia daily weather datasets, Indian Institute of Tropical Meteorology, Pune. The overall climate vulnerability of the Madhya Pradesh districts is projected to increase towards mid and end century as compared to the current conditions for both emission scenarios of RCP 4.5 and RCP 8.5. Districts vulnerability under RCP 8.5 scenario is projected to be higher as compared to RCP 4.5 scenario. The projected increase in vulnerability towards end-century is higher than that of mid-century for RCP 8.5 scenario. While, the projected increase in vulnerability towards end-century is relatively lower than that of mid-century for RCP 4.5 scenario. Factors contributing to projected increase in climate vulnerability of districts include projected increase in rainfall variability and higher sensitivity to heat stress.

Enhancing the productivity of major crops in tribal areas of Madhya Pradesh

A survey was carried out in five tribal villages *viz.*, Kaweli, Kulpa, Sarra, Khursodi, and Butta of Balaghat district of Madhya Pradesh during August, 2018 to document the Indigenous knowledge of tribal farmers and use of traditional farm implements for soil and water management in their farmlands. Kaweli, Kulpa, and Sarra villages are located inside forest with poor transportation facilities and entire population of these villages belongs to scheduled tribe. However, in Khursodi, and Butta villages that are located outside the forest area with relatively good transportation facilities tribal population was below 10 percent of the total population. Some of the soil and water management practices documented from the forest villages include terracing of undulated land, making big fields into small plots using earthen bunds, water harvesting ponds, deep summer ploughing, incorporation of crop stubbles, pond soil, ash, and farmyard manure into soil, fallowing of land, and vegetative field bunds. Also, these tribal farmers are using hybrid seeds purchased from market but there is no use of chemical fertilizers.

Technique for water management in paddy fields in undulated land

International Co-operation

SAARC Regional Training Program on Integrated Plant Nutrient Management

For increased awareness and greater scientific co-operation among member countries, the ICAR-Indian Institute of Soil Science, Bhopal in collaboration with SAC, Dhaka and International Rice Research Institute (IRRI) organized a training program during 5-10 September, 2018. The participants include were 16 researchers and department officials from Afghanistan, Bangladesh, Bhutan, India, Maldives and Sri Lanka.

Intergovernmental Technical Panel on Soils

Dr. Ashok K. Patra, Director represented India in the 9th working session of Intergovernmental Technical Panel on Soils at FAO, Rome, during 10 to 12 October, 2018.

Lab Managers Meeting Cum Workshop of South-East Asia Laboratory NETwork (SEALNET)

ICAR-Indian Institute of Soil Science (ICAR-IISS) and Food and Agricultural Organization (FAO) jointly organized 2nd Lab Managers Meeting-cum-Workshop of South-East Asia Laboratory NETwork (SEALNET) during 19-23 November 2018 at ICAR-IISS, Bhopal. The theme of the workshop was "Quality improvement in Asian soil laboratories: towards standardization and harmonization of soil analyses and their interpretation". Representatives/ Lab-Managers from FAO, Rome, FAO, India, France and 16 Asian countries viz., China, Japan, Mongolia, Nepal, Laos, Bangladesh, Thailand, Myanmar, Philippines, Vietnam, Bhutan, Sri Lanka, Cambodia, Malaysia, Indonesia and India attended the meeting.

Harmonization of laboratory methods and analysis techniques for the purpose of interoperability and sharing soil data globally is very important. The aim of this meeting was to (i) calibrate and harmonize soil testing procedures and practices in laboratories in Asian regions in the context of the Asian Soil Partnership, (ii) set up a regional inter-laboratory proficiency program to implement quality assurance/control (QA/QC) procedures and processes and, (iii) provide training and capacity building for lab staff.

During inaugural programme, Dr. Ashok K Patra, Director of the institute explained about the leading role taken by ICAR-IISS, Bhopal in soil research and extension in India. Mr. Tomio Shichiri, FAO representative in India explained the activities and projects of FAO in India and highlighted the importance of harmonization of laboratories engaged in soil testing. Dr Lucrezia Caon, FAO representative from Rome explained in brief about the genesis of SEALNET and the future road map. Dr. S K Chaudhari, ADG (SW&M), NRM, ICAR informed about the ICAR research and extension network and the Government Soil Health Card Scheme. A workshop on Indian National Network was also held on November 19, 2018 in which the protocols of soil testing in India and new techniques of soil analysis were dealt. The meeting cum workshop was co-funded by FAO, Rome and ICAR. In addition to international participants, the meeting was attended by Scientists of ICAR-IISS and other international institutes like IPNI, and representatives from state department of agriculture, Madhya Pradesh. Dr. Sanjay Srivastava, Principal Scientist co-ordinated the meeting cum workshop.

Group photograph of SEALNET participants

Mr. TomioShichiri, FAO representative in India addressing the participants of 2nd Lab Managers Meeting-cum-Workshop of South-East Asia LaboratoryNETwork (SEALNET) on 19November 2018 at ICAR-Indian Institute of Soil Science, Bhopal

Dr. S.K. Choudhari, ADG (SWM) Inaugurating the SEALNET programme

Display of Mridaparikshak mini lab developed by ICAR-IISS, Bhopal to participants of SEALNET during the workshop

Winter School/ Short Course/ MTC Organized

Training programme	Duration	Organized by	Sponsored by	Participants
A winter school on "Advance Microbial Technologies to Enhance Nutrient Use Efficiency and Mitigation of Greenhouse gas Emission from Agriculture"	4-24 Sept 2018	SR Mohanty K Bharati JK Thakur	ICAR	Scientists from ICAR, SAUs and KVKs (24 nos.)
Short Course on "Physiological approaches to phytoremediation: advances, impacts and prospects"	10-19 Dec. 2018	Ajay, R Elanchezhian, S Ramana	ICAR	Scientists from ICAR, SAUs and KVKs (17 nos.)
Model Training Course (MTC) on "Rapid Bio-Waste Management Technologies: Options for Recycling, Reuse and Recovery"	24 Nov. - 01 Dec. 2018	Asha Sahu, S.Bhattarjya, AB Singh, MC Manna and AK Patra	Directorate of Extension, DAC &FW , GOI, New Delhi	Officers of the State Department of Agri./Horticulture/ Scientists from KVKs (20 nos.)



Other Training Programmes Organized

Training Programme	Duration	Organized by	Sponsored by	Participants
Leaf and Soil Analysis Techniques: Interpretation and Recommendations	28 August - 03 September, 2018	Brij Lal Lakaria R Elanchezhian Priya Gurav	Directorate of Horticulture, HP, Shimla	DHO, HDOs, AHOs and lab. personnels (15 nos.)
Soil Health and Management	08-12 October, 2018	Sanjay Srivastava BP Meena Shinogi KC	Department of Farmers' Welfare & agriculture, Govt. of MP	Officials from State Department of Agriculture, MP (15nos.)
Interstate farmers training on "Soil Fertility Management"	29-31 October, 2018	J Somasundaram AK Vishwakarma M Vassanda Coumar NK Sinha	Department of Agriculture, Coimbatore, TN	Farmers from Annur, Coimbatore, TN (20 nos.)
Linking Geo-spatial Technologies and Agriculture System Models to Assess Impact of Climate Change on Natural Resource Management	24 October-02 November 2018	M Mohanty NK Sinha J Somasundaram AK Patra	NICRA	Scientists and project staff of NICRA



One day training programs/Educational visits

- One-day training on importance of soil health in nursery raising/plantation was organized on 06 October, 2018 for Forest Department Police Personnel (J. Somasundaram)
- One-day training programme for School of Planning and Architecture (SPA). About 40 Post graduate students were trained on the importance of soil health/ Role of soils in landscape planning (16 Nov, 2018) (J. Somasundaram)
- About 120 students from Navodaya Vidyalaya Samiti visited the Institute on 22 Nov., 2018 (K.M. Hati and J. Somasundaram)

Important Events

International Soil Day

ICAR-Indian Institute of Soil Science celebrated world soil day on 5 December 2018 at Parwalia sadak village on the theme - Be the Solution to Soil Pollution in which about 200 farmers participated. Dr N.N. Goswami, Former Dean, (IARI) & Ex-Vice Chancellor (CSAUAT), Kanpur, Dr A. Subba Rao, Ex-Director (IISS), and Prof. D.K. Das, Ex-Head, Division of Agricultural Physics, IARI, New Delhi, graced the occasion. Officials from Govt of M.P. and State of Bank of India also participated in this event.

25th Dr. D. P. Motiramani Memorial Lecture

ICAR- Indian Institute of Soil Science in association with Bhopal chapter of Indian Society of Soil Science organised 25th Dr. D. P. Motiramani memorial lecture on 17 December 2018. The lecture was delivered by Dr. K. P. Vaidya, Professor, Soil Science & Agriculture Chemistry, BSKVV, Dapoli, Maharashtra on "Integrated Nutrient Management for Sustainable Agriculture".

Interaction Meets

- Organized **Farmer Scientist Interaction Meet** at Perwalia Sadak village on 09 Sept, 2018 under SAARC Regional Training on Integrated Nutrient Management for Improving Soil Health and Crop Productivity.
- Organized **Kisan Diwas** on 23 December, 2018 at ICAR-IISS, Bhopal.
- Organized **Rashtriya Mahila Kisan Diwas** on 15 October 2018.

Central Zone Sports Tournament

ICAR- Indian Institute of Soil Science organized the Central Zone Sports Tournament 2018 at Sports Complex of BHEL, Bhopal for the first time during 12-15 November, 2018. The event was inaugurated by the Chief Guest, Dr. V. S. Tomar, former Vice-Chancellor, JNKVV, Jabalpur. Dr. Navin Chandra, Director General, Madhya Pradesh Council of Science and Technology and Dr. A. Subba Rao, former Director, ICAR-IISS distributed the certificates and trophies during the valedictory function held on 15 November 2018. Dr. Brij Lal Lakaria being the Organizing Secretary of the tournament managed the event in smooth and hassle free way and provided the best facilities to the participants under the guidance and chairmanship of Dr. Ashok K. Patra, Director, Indian Institute of Soil Science, Bhopal. Dr. Sangeeta Lenka was judged the Best Athlete (Female) in ICAR-Central Zone Sports Tournament during 12-15 November, 2018.



Vigilance Awareness Week

The vigilance awareness week was organized at ICAR-IISS, Bhopal during Oct. 29-Nov. 3, 2018. All staff were administered the Integrity Pledge on this occasion.

Independence Day Celebration

Independence day was celebrated with lots of fervor and joy. Dr. Ashok K. Patra hoisted the flag and addressed the gathering on this occasion. Many sports and cultural activities were also organised.

Swachhta Pakhwada

Organised swachhta pakhwada during 16-31 December, 2018 with great enthusiasm and activities. During this period both on campus and off campus cleanliness activities were performed involving institute scientist/ staff/ students/ farmers/local citizens.




Awards and Recognitions

- Dr. Ashok K. Patra, Director was elected as President of Indian Society of Soil Science for the biennium 2019 and 2020.
- Dr. Pramod Jha completed short term post doc research under Endeavour Research Fellowship Progrmme at The University of Queensland, st Lucia 4067, Australia from 08 May to 02 November, 2018.
- Dr. KM Hati completed short term post doc research under Endeavour Research Fellowship Progrmme at The University of Queensland, st Lucia 4067, Australia from 01 May to 02 October, 2018.
- Dr. Sanjib Kumar Behera was elected as Councillor of Indian Society of Soil Science for the year 2019 and 2020.
- Dr. Sanjib Kumar Behera received XII International Congress Commemoration Award 2018 from Indian Society of Soil Science, New Delhi

Dr. Sanjib Kumar Behera receiving the award from Shri O. P. Kohli, Honourable Governor of Gujarat

- Drs. MC Manna, RH Wanjari, Muneshwar Singh, Ashok K Patra and SK Chaudhary received the IPNI-FAI Award 2018 for Best Research on "Management and Balanced Use of Inputs in Achieving Maximum Yield" at Annual Symposium of Fertilizer Association of India, New Delhi on 5 December, 2018.

Distinguished Visitors

- Dr. JK Jena, DDG (Animal Science), ICAR, New Delhi on 3 August, 2018.
- Shri Suresh Chandel, Ex-Member of Parliament and Member of Governing Body of Indian Council of Agricultural Research on 29 September, 2018.
- Dr. NN Goswami, Former Dean, (IARI)& Ex-Vice Chancellor (CSAUAT), Kanpur, Dr. A. Subba Rao, Ex-Director (IISS), and Prof. D.K. Das, Ex-Head, Division of Agricultural Physics, IARI, New Delhi visited on the occasion of RAC meeting.
- Dr. Trilochan Mohapatra, Hon'ble Secretary (DARE) & Director General (ICAR) visited ICAR-Indian Institute of Soil Science, Bhopal on 13th Dec, 2018.

Staff News

Joining

- Mrs. Seema Bhardwaj, Scientist, joined at ICAR-IISS on 07 July, 2018 from ICAR-CAZRI Jodhpur.

Promotion

- Mrs. Seema Bhardwaj, Scientist promoted RGP 7000 to RGP 8000 w.e.f. 07.01.2018 vide Jodhpur office order dated 27.11.2018.
- Shri Anurag, Security Supervisor granted MACP from Level-5 to Level-6 w.e.f. 13.08.2018.
- Shri Hiralal Gupta, UDC granted MACP from Level-4 to Level-5 w.e.f. 23.08.2018
- Shri Thomas Joseph, PS granted MACP from Level-7 to Level-8 w.e.f. 01.09.2018
- Shri Hiralal Gupta, UDC promoted from UDC to Assistant w.e.f. 29.09.2018 Shri Sajnay Kori, promoted from Steno Grade III to Personal Assistant w.e.f. 29.12.2018

Obituary

- Shri Naresh Singh Yadav, Ex-Technical Officer (Driver) left for his heavenly abode on 28 October, 2018.

Scientists' participation in conference/seminar/training/workshop/group discussion etc.

Name	Programme attended
Dr AK Patra	Launching workshop for a Conservation Agriculture project during 7-8 July, 2018 at BCKVV, Kalyani. ICAR-CIMMYT Joint Workshop on "Conservation Agriculture in India: Key Learnings, Research Gaps and Way Forward for Impact at Scale" during 9-10 July, 2018 at NASC Complex, Pusa, New Delhi. Cadre Review meeting of the institute at NASC Complex, Pusa, and meeting to discuss the methodology to be adopted for assessment of fertilizers as per Soil Health Card Data on 18 July, 2018 at ICAR, Krishi Bhawan, New Delhi. Delivered a presentation on "Sustainability of Indian Agriculture: Natural Resource Perspective with Special Reference to Soil" in the National Workshop during 08-09 September, 2018 at ICAR, NASC Complex, New Delhi. 21st CMSI Annual Convention 2018 and Chair a Session of the National Conference on "Advances in Clay Science towards Agriculture, Environment and Industry" during 14-15 September, 2018 at ICAR-NBSSLUP, Regional Centre, Kolkata. Dr. N.S. Randhawa Memorial lecture on 22 September, 2018 at College of Agriculture, Indore. National level awareness/ workshop for the Academic Institutions on National Academic Depository at All India Council for Technical Education (AICTE) on 28 September, 2018 at New Delhi. Strategy workshop on "Development and Adoption of Novel Fertilizer Materials" during 5 October, 2018 at NASC, New Delhi. Agriculture Startup & Entrepreneurship Conclave and ICAR Award ceremony on 16 October, 2018 at New Delhi. Preparatory meeting of 5th Asian Partnership Meeting with FAO during 26 February to 01 March, 2019 at New Delhi. Keynote address in the National Symposium on "Integrated Farming Systems for 3Es" during 23-24, December 2018 at UAS, Bengaluru.
Drs Ashok K Patra, AK Shukla, AB Singh, KM Hati, Sanjib K Behera	National Seminar on Developments in Soil Science 2018 cum 83rd Annual Convention of ISSS during 27-30 November, 2018 at Anand Agricultural University, Anand, Gujarat.
Dr AK Biswas Dr AK Vishwakarma	ICAR-CIMMYT joint workshop on "Conservation Agriculture in India: Key Learnings, Research Gaps and Way Forward for Impact at Scale" during 9-10 July, 2018 at New Delhi. Review meeting on weed management of CRP on CA during 11-12 September, 2018 at ICAR-DWR, Jabalpur.
Dr AK Biswas	Assessment Committee meeting for CAS promotion of Scientist on 11 July, 2018 at CAZRI, Jodhpur. External examiner for conducting Thesis Viva on 10 August, 2018 at BHU, Varanasi, (U.P.). Meeting on Zero Budget Natural Farming (ZBNF) during 30-31 August, 2018 at RySS, Govt. of AP at Vijayawada. DPC meeting for promotion of ARS Scientists under Career Advancement Scheme as member of the Selection committee during 4-5 September, 2018 at Umiam, Meghalaya. Workshop on "Sustainability of Indian Agriculture" on 8 September, 2018 at NASC Complex, New Delhi.

Name	Programme attended
Dr AK Biswas	An expert for Lab Evaluation exercise during 25-26 September, 2018 at Tirupati, A.P. Strategy Workshop on Development and Adoption of Novel Fertilizer Materials on 5 October, 2018 at New Delhi. Assessment Committee meeting as DG's nominee for upgradation of Scientists during 22-24 October, 2018 at VPKAS, Almora. Project Evaluation Committee (PEC) meeting of Technology Development Board of DST, GoI during 1-3 November, 2018 at Salem, Tamil Nadu Review Meeting of CRPs on 28 December, 2018 at Krishi Bhawan, New Delhi.
Dr JK Saha	4th meeting of the Technical Expert Committee (TEC) for Development of Soil Standards under World Bank aided "Capacity Building for Industrial Pollution Management Project (CBIPMP)" on 14 December, 2018 at Indira Paryavaran Bhawan, New Delhi. Meeting with honourable DG, ICAR, New Delhi regarding presentation of the QRT report of IISS, Bhopal on 13 September, 2018 at Krishi Bhavan, New Delhi. Meeting of Assessment committee for CAS held on 5 September, 2018 at ASRB, KAB-I, Pusa, New Delhi. Meetings of site selection committee for establishment of new Krishi Vigyan Kendra for Sukma District at Raipur and Sukma, Chhattisgarh during August 21-23, 2018.
Drs AK Patra, AK Biswas, RS Chaudhary, J Somasundaram, Pramod Jha	2nd SEALNET meeting during 19-23 November, 2018 at ICAR-IISS, Bhopal.
Dr RS Chaudhary	National workshop on finalizing "Soil health indicators" at NASC, new Delhi, from 7- 8 September, 2018 organized by NIAP, New Delhi. Workshop cum meeting on "Weed management in conservation agriculture" from 11-12 September, 2018 at ICAR-DWR, Jabalpur, Madhya Pradesh. National seminar on "Development in Soil Science-2018" from 27-30 November, 2018 at AAU, Anand. Multi-stakeholder consultation workshop on Kolar river revival of upper lake, Bhopal on 28 December, 2018 at EPCO, Bhopal.
Dr BP Meena Mrs Seema Bhardwaj	SAARC training programme on "Integrated nutrient management for improving soil health and crop productivity" during 5-10 September, 2018 at IISS Bhopal organized by ICAR-Indian Institute of Soil Science, Bhopal.
Dr Priya Gurav	Presented ISSS best doctoral research presentation award preliminary round at Rajasthan Agricultural University, during 22-26 October, 2018 and ISSS best doctoral research presentation award final round at Anand Agricultural University, Gujarat during 26-30 November, 2018.
Dr J Somasundaram	A Workshop-cum-Meeting on 'Weed management in Conservation Agriculture' during 11-12 September, 2018 at ICAR-Directorate of Weed Research, Jabalpur. 25th Zonal Workshop of KVKs of Zone IX comprising of Madhya Pradesh and Chhattisgarh, organized by Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur, Madhya Pradesh during 5-7 September, 2018. Lead presentation on 'Soil health management for doubling farmers' income' in the 25th Zonal Workshop of KVKs of Zone IX comprising of Madhya Pradesh and Chhattisgarh was organized by Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur.
Mrs Seema Bhardwaj	NICRA sponsored training program on "linking geo-spatial technologies and agriculture system models to assess impact of climate change on natural resource management during 24 October – 02 November, 2018.

Dr Nishant K Sinha	Presented progress of project on "Hyperspectral Remote Sensing Approaches to Evaluate Soil Quality and Crop Productivity of Central India" during TCC meeting at CRIDA on 04 September, 2018.
Dr M Mohanty	Workshop on "Prioritisation of Rainfed Areas in India" organised by NRRA and CRIDA, Hyderabad during 11-12 December, 2018. Annual Review workshop (Monsoon Mission II) of IITM-IISS project and meeting with PI-DST/NICRA, New Delhi during 24-27 September, 2018. Meeting at ICAR-IISR Indore to discuss the Technical Programme of IISS-IITM project on 23 August, 2018.
Dr M Mohanty Dr Nishant K Sinha	Meeting at ICAR-IISR and IISR-IITM Indore during 22-23 September, 2018.
Dr Nishant K Sinha	Training workshop on "Climate Change Over the High Mountains of Asia (HMA)", IITM Pune, India during 08-12 October, 2018.
Drs Asit Mandal M Vassanda Coumar	SAARC regional Training Program on "Integrated Nutrient Management for Improving Soil Health and Crop Productivity" during 5-10 September, 2018 held at ICAR-IISS, Bhopal, India. Second lab managers' meeting of the South-East Asia Laboratory NETwork (SEALNET) during 19-23 November, 2018 held at ICAR-Indian Institute of Soil Science (IISS), Bhopal, India.
Drs AB Singh, R Elenchezhian, Asha Sahu, Dolamani Amat	Global Clean Up Congress, organized by CRC CARE, Global CARE and TNAU Coimbatore during 22-24 October, 2018.
Dr AB Singh	One day Workshop on Strategies to improve Agricultural Extension in Madhya Pradesh at SIEAT, Bhopal on 4 July, 2018. 13th Annual Group Meeting of NPOF at TNAU, Coimbatore during 27-29 November, 2018. Second Meeting of QRT-ICAR-IIFSR in relation to Organic farming at Rajasthan Agricultural Research Institute, Durgapur, Jaipur during 10-11 October, 2018. TV talk on "Organic farming and Soil health" on 13 July, 2018 at Doordarshan Kendra Bhopal. Radio talk on "*Kenchua Khad Kheti Ke Liye Vardan*" on 08 October, 2018 at Prasar Bharati, All India Radio Bhopal.
All Staff	Central Zone Sports Tournament during 12-15 November, 2018.

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