



PDFSR Newsletter

Project Directorate for Farming Systems Research
Modipuram, Meerut-250 110

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DIRECTOR GENERAL RELEASED RESEARCH BULLETIN

Dr. S. Ayyapan, Director General, ICAR and Secretary, DARE, MOA, GOI, New Delhi released a Research Bulletin entitled "Sulphur Management in crops and Cropping Systems" (authored by V. K. Singh and B. Gangwar) published by Project Directorate for Farming Systems Research, Modipuram, Meerut (UP) at the NASC Complex, PUSA, New Delhi. This bulletin summarizes

Sulphur delineation studies' conducted across the country under the aegis of TSI-FAI-IFA and ICAR and mainly focuses on the extent of S deficiency in India, deficiency symptoms under different cropping systems and strategies for different stakeholders in agriculture for paving the way to break the stagnating/declining trend in crop productivity.



Director General, ICAR, New Delhi with other dignitaries during research bulletin release function

RESEARCH ADVISORY COMMITTEE MEETING

The 16th meeting of newly constituted Research Advisory Committee (RAC) of PDFSR was held during 8-9 February, 2011 at PDFSR, Modipuram under the chairmanship of Prof. Panjab Singh, former Secretary DARE and Director General ICAR. The other members were Dr. R. P. Singh, Dean, Institute of Agricultural Sciences, BHU, Varanasi; Dr. Suresh Pal, Head, Division of Economics, IARI, New Delhi; Dr. K. K. Vass, Ex- Director, CIFRI (ICAR); Dr. Shyam Singh, Ex-Director, NRC for Citrus (ICAR); Dr. A. K. Yadav, Director, NCOF, Ghaziabad; Dr. B. Gangwar, Project Director, PDFSR, Modipuram; Dr. J. C. Dagar, ADG (Agronomy), ICAR, New Delhi and Dr. Kamta Prasad, Pr. Scientist & Member Secretary. In total, there were 26 participants, including special invitees. During discussions, Dr. Panjab Singh re-emphasized that cropping systems on farmers' fields are becoming

more and more market-driven, and hence the big challenge lies ahead of us as who would adopt our recommendations with reference to new cropping systems? He also opined that scientifically it would be more appropriate if cropping systems are compared in terms of energy input-output, as monetary returns are totally governed by the market prices for inputs and produce, which remain highly fluctuating over time and domain. All the committee members were of the view that PDFSR scientists should concentrate all their efforts on characterization of prevailing farming systems, documentation of IFS research already done at the Directorate and visualizing new IFS research projects. The committee, after detailed discussions and visit of the experimental fields, made the some valuable recommendation which later on became the part of research planning.



Project Director welcoming Dr. Panjab Singh, Chairman, RAC and former DG, ICAR and Secretary, DARE, MOA, New Delhi



Research Advisory Committee Meeting in progress

GROUP MEETING OF AICRP ON IFS

Group Meeting of AICRP on IFS was held at Port Blair (A & N ISLANDS) during 27-29 December, 2011. The meeting was jointly organized by PDFSR, Modipuram, and Central Agricultural Research Institute (ICAR), Port Blair (A & N Islands). The inaugural session was chaired and presided over by Dr A. K. Singh, DDG (NRM), ICAR, New Delhi

and Prof. Panjab Singh, Ex-Secretary DARE and DG, ICAR, New Delhi was the chief guest. Dr S. K. Ambast, Director, CARI welcomed the delegates. In his introductory remarks, Dr. B. Gangwar, Project Director, PDFSR, Modipuram highlighted that the income from cropping alone is hardly sufficient to sustain the farmers' needs, especially in case of

small and marginal farmers, who constitute about 86% of total farm households in the country. In rural areas also farmers' requirements for cash have increased to improve their standard of living. Therefore, farmers' income and food requirements would have to be augmented and supplemented by adoption of efficient secondary/ tertiary enterprises like animal husbandry, horticulture (vegetables/ fruits/ flowers/ medicinal and aromatic plants), apiary, mushroom cultivation, fisheries etc. However, these integrated farming systems would be required to be tailor-made and designed in such a manner that they lead to substantial improvement in energy efficiencies at the farm and help in maximum exploitation of synergies through adoption of close cycles. Dr A.K. Singh, in his presidential address, emphasized on the importance of integrated farming systems in agriculture as they are the potential tools to address the core issues of providing regular income to the farmers, sustainability of the system, enhancing input/ resource use efficiencies and finally adequate resilience to agriculture against climate change. Prof. Panjab Singh, in his inaugural address, was highly appreciative of IFS research under AICRP on IFS. He mentioned that this project has become much more important than what it used to be earlier. He further highlighted that IFS approach of research has an answer to all the issues of farm profitability– diversity– sustainable agriculture– livelihood

security– climate resilient agriculture but, at the same time it is a great challenge to multiply the successful models at farmers' fields.

The activities in the Workshop were spread over 6 different sessions mainly presentation of research highlights, review of results, and 12th plan priorities and strategies. The Plenary session of the Workshop was chaired by Dr. B. Gangwar, Project Director, PDFSR, Modipuram. The Workshop ended with a vote of thanks to all dignitaries, functionaries and participants by Dr Kamta Prasad (Programme Facilitator, Coordinating Unit).



Prof. Panjab Singh, Chief guest, Dr. A. K. Singh, DDG, NRM and other dignitaries in the inaugural session of the Workshop

INSTITUTE MANAGEMENT COMMITTEE (IMC) MEETING

The 28th Meeting of IMC was held on 18th February, 2011 at the Directorate under the chair of Project Director , Dr. B. Gangwar. Dr. P. C. Bhatia (Ex ADG, ICAR), Dr. N. D. Mazumdar (PC, Pigeon pea, IIPR, Kanpur), Dr. Kamta Prasad (PF, CU, PDFSR, Modipuram), Dr. S. S. Pal (PF, OAS, PDFSR, Modipuram), Dr. J. P. Singh (PF, IFS, PDFSR, Modipuram), Dr. M. P. Singh (PF, TTR, PDFSR, Modipuram), Dr. S. P. Singh (PF(I/C), SDDE, PDFSR, Modipuram) and Mr. T. C. Sharma (AFAO, PDFSR, Modipuram) attended the meeting. During the discussion, the committee accepted the action taken report for the last IMC. Apart from routine works, recommendation of Remotely managed franking system machines and approval of balance payment to CPWD for construction of

Boundary wall for 65 acre of Farm land at Siwaya farm was agreed.



IMC in progress

TRAINING ON FARMING SYSTEM MANAGEMENT (FSM)

Training on Farming System Management was organized in the Project Directorate for the leaders of different farmers' clubs and NGOs associated with NRM center, NABARD, Kolkata during 5-10 September, 2011 at the PDFSR, Modipuram. A total of 29 farmers belonging to seven states such as Himachal Pradesh, Haryana, Punjab, Uttar Pradesh, Uttaranchal, Bihar and Jharkhand took participation in the training. A number of classroom lectures and field visits of IFS models developed at the Directorate were arranged for the trainees. Mr. M. K. De, AGM, NABARD was the chief guest at the valedictory function.



Training session on FSM in progress

ANNUAL WORKSHOP OF NETWORK PROJECT ON ORGANIC FARMING (NPOF)

The two day Workshop on NPOF was held during 22-23 February, 2011 under the chair of Dr. B. Gangwar, Project Director, PDFSR, Modipuram, Meerut. Dr. A. K. Yadav, Director, National Centre for the Organic Farming, Ghaziabad, Uttar Pradesh was the chief guest. Thirty delegates from SAUs and ICAR institutes participated in the Workshop. At the outset, Dr. B. Gangwar highlighted the purpose of conducting such Workshop and in brief discussed the overview of the organic farming programme. The need for publication of the consolidated report of the NPOF was felt and a discussion was held to set the priorities for NPOF under the next five year plan period. It was emphasized that the inclusion of animal component should be essential in the future programme of NPOF. Centre-wise presentations were made and necessary suggestions were imparted during discussion.



Dr. A. K. Yadav addressing the participants of the Workshop

MODEL TRAINING

A model Training Course on Conservation Agriculture was conducted at PDFSR, Modipuram during 12-19 December, 2011. The Training was sponsored by Department of Extension, Ministry of Agriculture, GOI, New Delhi. Officers of the state line departments, of senior ranks, belonging to states of Chhatisgarh, Punjab, Haryana and Uttar Pradesh and scientists and technical officers of PDFSR, Modipuram attended the Training. Technologies on energy efficient and cost effective conservation agriculture for improving system productivity, work efficiency and labors' welfare were mainly demonstrated and discussed during the training.



Project Director distributing certificate to the trainees

निदेशालय में दिनोंक 14-28 सितम्बर 2011 तक हिन्दी पखवाड़े का आयोजन किया गया। निदेशालय कर्मियों में राजभाषा के प्रति अभिरूचि पैदा करने तथा दैनिक कार्यों में हिन्दी के अधिकाधिक प्रयोग को बढ़ावा देने के उद्देश्य से हिन्दी पखवाड़े के दौरान कार्यक्रम/प्रतियोगिताएँ जैसे अन्त्याक्षरी, इमला एवं पत्र लेखन, हिन्दी सामान्य ज्ञान प्रश्नोत्तरी एवं आशुभाषण के अतिरिक्त फाइलों पर हिन्दी में सर्वाधिक कार्य करने वाले अधिकारियों एवं कर्मचारियों तथा वैज्ञानिकों एवं

तकनीकी अधिकारियों द्वारा हिन्दी में प्रकाशित किये गये बुलेटिन/शोध-पत्र/लोकप्रिय लेखों को भी प्रतियोगिता में शामिल किया गया। इन प्रतियोगिताओं में भाग लेने वाले तथा प्रथम, द्वितीय एवं तृतीय स्थान प्राप्त करने वाले एकल प्रतिभागी/टोली को पुरस्कार वितरित किये गये। पखवाड़े के समापन के अवसर पर सभी ने अधिक से अधिक कार्य हिन्दी में करने का संकल्प व्यक्त किया।

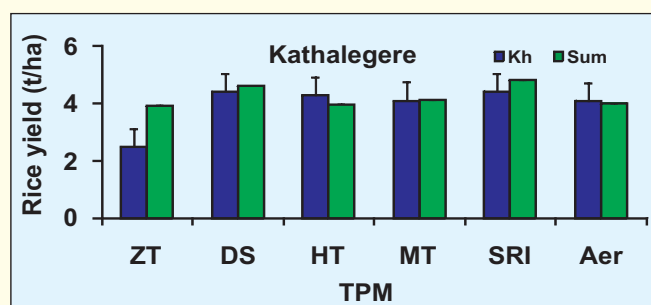


RESEARCH HIGHLIGHTS

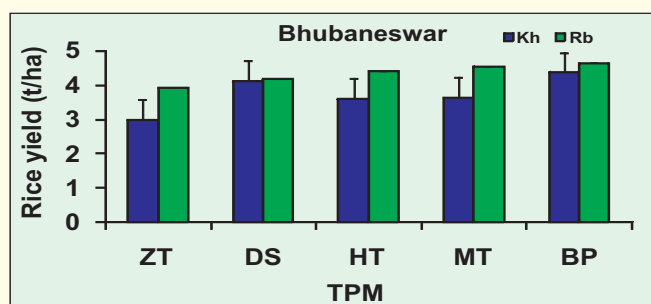
Resource Conservation Technologies in Rice – Rice cropping system

K. K. Singh

At Kathalegere (Karnataka), during *kharif*, the system of rice intensification gave maximum rice yield (4.41 t ha^{-1}) that was *at par* with drum seeding, hand transplanting, mechanical transplanting and aerobic method but 77 % higher than zero till drilling. During summer, all the treatments gave similar yields but system of rice intensification gave numerically maximum rice yield (4.81 t ha^{-1}).



At Bhubaneswar (Odisha), during *kharif*, bed planting gave maximum rice yield (4.36 t ha^{-1}) that was *at par* with drum seeding (4.12 t ha^{-1}) but 20, 21 and 45 % higher than mechanical transplanting, hand transplanting and zero till drilling, respectively. During *rabi*, all the treatments provided similar yields but bed planting gave numerically maximum rice yield (4.64 t ha^{-1}) also.



खरीफ फसलों में एकीकृत पोषक तत्व प्रबंधन

नंद किशोर जाट एवं सुनील कुमार

भारत जैसे देश में जहां अधिकांश कृषित क्षेत्रफल खरीफ ऋतु में बोया जाता है वहां खरीफ फसलों में एकीकृत पोषक तत्व प्रबंधन की आवश्यकता है। इसके अतिरिक्त कुछ विशेष पारिस्थितिकी दशाओं के कारण खरीफ ऋतु में फसलों को पोषक तत्व प्रदान करने के लिए एकीकृत पोषक तत्व प्रदान करना अति आवश्यक है। खरीफ ऋतु में वर्षा जल की अनिश्चित मात्रा के कारण भूमि में पोषक तत्वों की मात्रा एवं उपलब्धता असंतुलित होने की संभावना अधिक रहती है। आर्द्रता एवं तापमान अधिक होने से कीट व्याधियों का प्रकोप भी अधिक रहता है जिससे फसलों की उत्पादकता बनाए रखने के लिए पोषक तत्वों की अधिक आवश्यकता होती है। ग्रीष्म ऋतु में भूमि से नाइट्रोजन, कार्बनिक पदार्थ आदि तत्वों का वाष्पिकरण होकर मृदा की उर्वरता कमजोर हो जाती है। बारानी परिस्थितियों में पोषक तत्वों के अभाव में खरीफ फसलों की जल उपयोग दक्षता कम होकर सूखा सहने की क्षमता कम हो जाती है। वर्षा जल एवं इससे पूर्व ग्रीष्म ऋतु में मृदा क्षरण होकर उर्वरता का ह्रास होता है।

एकीकृत पोषक तत्व प्रबंधन में कार्बनिक खादों जैसे गोबर की खाद, बायोगैस स्लरी, विभिन्न प्रकार की कम्पोस्ट (शहरी कम्पोस्ट, ग्रामीण कम्पोस्ट आदि), केचुआं खाद (वर्मी कम्पोस्ट) तिलहन फसलों की खलियों आदि का विभिन्न फसलों में उपयोग कर रासायनिक उर्वरकों की मात्रा को कम किया जा सकता है। इसके अतिरिक्त हरी खाद के लिए मुख्यतया: ढैचा, मूंग, सनई, लोबिया, ग्वार आदि फसलों का प्रयोग किया जाता है, जो सड़ने के बाद मृदा में मुख्य पोषक तत्वों के साथ-साथ गौण एवं सूक्ष्म पोषक तत्वों की भी आपूर्ति करते हैं।

उत्तर-पश्चिमी भारत जहां चावल-गेहूँ फसल पद्धति में यांत्रिक कटाई प्रचलित है आमतौर पर किसान फसल अवशेषों को खेत में ही जला देता है जिससे पोषक तत्व नष्ट होने के साथ-साथ पर्यावरण प्रदूषण भी बढ़ता है। किसान इन फसल अवशेषों का कृषि में सदुपयोग कर मृदा में पोषक तत्वों की उपलब्धता की मात्रा में वृद्धि कर सकते हैं। एकीकृत पोषक तत्व प्रबंधन में जैव उर्वरक रासायनिक उर्वरकों का सस्ता एवं प्रभावी विकल्प है।

जैव-उर्वरक वायुमण्डल में उपस्थित नाइट्रोजन का स्थिरीकरण तथा मृदा में अधुलनशील फॉस्फोरस को घुलनशील बनाकर पौधों को नाइट्रोजन एवं फॉस्फोरस उपलब्ध कराकर फसलों की पैदावार में बढ़ोतरी करते हैं। जैव उर्वरक आर्थिक दृष्टि से बहुत सस्ते होने के साथ-साथ इनका उपयोग सुविधाजनक होता है। नाइट्रोजन स्थिर करने वाले जैव उर्वरक जैसे राइजोबियम, ऐजेटोबैक्टर, एजोस्फिरिलम, नील हरित शैवाल आदि एवं फॉस्फोरस विलेयकारी जीवाणु जैसे *स्यूडोमोनास स्ट्रेइटा*, *बेसिलस पोलीमिक्सा*, *बेसिलस मेगाटेरियम* व *बेसिलस सबटिलिस* आदि एवं कवक *एस्पेरजिलस अवामोरी*, *एस्पेरजिलस नाइजर* आदि हैं।

आजकल सघन खेती के परिवेश में नाइट्रोजन, फॉस्फोरस तथा पोटाश का उपयोग अनुपात 8.9:2.8:1 में हो रहा है, जबकि सही उपयोग अनुपात 4:2:1 होना चाहिए जो असंतुलित उर्वरक प्रयोग का प्रमाण है। सघन कृषि प्रणाली में जैविक खादों, संतुलित उर्वरकों व जैव उर्वरकों के प्रयोग के साथ-साथ सही फसल चक्र को अपनाना नितान्त आवश्यक है। उर्वरकों का संतुलित और समन्वित प्रयोग कर मृदा उर्वरता में वृद्धि के साथ पर्यावरण पर इनके कुप्रभावों को भी कम किया जा सकता है।

खरीफ फसलों में अधिक उपज एवं गुणवत्ता प्राप्त करने एवं मृदा उर्वरता को बनाए रखने के लिहाज से एकीकृत पोषक तत्व प्रबंधन के सभी घटकों में से उपयुक्त घटकों को फसल विशेष की प्रकृति एवं पोषक तत्वों की आवश्यकता को ध्यान में रखकर प्रयोग में लाया जा सकता है। फसल विशेष एवं फसल समुह के अनुसार पोषक तत्वों की उर्वरकों के रूप में सिफारिश मात्रा का कुछ भाग अन्य घटकों को सम्मिलित कर विस्थापित किया जा सकता है।

EXTENSION ACTIVITIES

Kisan Gosthi on “Krishi Pranali Prabandhan”

A Kisan Gosthi on “Krishigat Pranali Prabandhan (Farming system management)” was organized on 11th February, 2011 under the aegis of PDFSR Modipuram and THDC Rishikesh at Kumharpura village of Bijnor District. About 302 farmers were present on this occasion. The face to face interaction with scientist



Overview the krishak gosthi

and farmers was held regarding problem occurring in adoption of new technologies related to crop and livestock production and on-spot solution was suggested. The mini kits of high yielding dwarf wheat seed (DBW-16) for late sown, Anar sapling for kitchen gardening and mineral mixture for animal health were also distributed to the selected beneficiaries of the THDC project.

Anusandhan Towards Villages

1. Benchmark survey was conducted in Meerut District of Uttar Pradesh during the month of August, 2011 for selection of new villages to be adopted under the Directorate's project. A total of 12 villages of 4 blocks were surveyed and finally 2 villages were selected based on the criteria of adoption in farming system perspective. Benchmark survey of these two villages namely, Alipur and Madarpur of Sardhana block was conducted to ascertain the existing farming system practices and the constraints faced by the farmers.
2. A Benchmark survey for resource characterization of 20 villages under THDC Project was conducted in Tihari and Uttarkashi Districts of Uttarakhand State during September to November 2011.

Participation in Exhibitions

1. An exhibition stall of PDFSR was put up in IVRI Kisan Mela at IVRI campus, Izatnagar, Bareilly, Uttar Pradesh during 18-20 October, 2011. Two scientists namely, Drs. Anil Kumar and B. K. Sharma attended the Mela to put up the exhibition stall. About 700 farmers, students and other participants visited the Directorate's stall and got acquainted with Directorate's technologies through discussion and distribution of literature.
2. An exhibition stall was put up by the Directorate in All India Farmers' Fair (North Zone) and Agro-industrial Exhibition from 23-25 November, 2011 organised by Sardar Vallabhai Patel University of Agriculture & Technology, Meerut. The Directorate's stall was adjudged as first in ICAR/GOI category. More than 1000 farmers, students



Project Director, Dr. B. Gangwar, Dr. Anil Kumar and Dr. B. K. Sharma with the winning trophy

and other participants visited the Directorate's stall and got acquainted with Directorate's technologies through discussion and distribution of literature.

Launching workshops and interaction meet of THDC funded project

The launching workshop of new project entitled "Ensuring Livelihood Security Through Farming System Approach in Tehri District of Uttarakhand" was organized in Tehri district during 6-7th September, 2011. It was on 6th September 2011 a *kishan gosthi cum* workshop was organized in Koteswar Block of New Tehri (Uttarakhand) wherein 52 farmers participated. In the workshop –cum- training programme, the face to face interaction with the farmers regarding crops, livestock, horticultural



Launching workshop in progress

crops and goat farming etc. was held during the *kishan gosthi*. The team of the scientist expressed their views about farming system improvement as per the need. The team also distributed vegetable seeds for kitchen gardening and medicines for livestock such as deworming in calves, mineral mixture for milking animals and heat inducers.

The second *kishan gosthi* cum launching workshop was organized on 7th September 2011 at Kandisaud Block, New Tehri (Uttarakhand) wherein 72 farmers from nearby villages participated. Face to face interaction with the team of scientists and farmers regarding crops, livestock, horticultural crops and goat farming etc. took place during the *kishan gosthi*. The scientist expressed their views about farming system improvement as per the need. The team distributed seeds of vegetables, mineral mixture, performed deworming and applied heat inducers to the farmers concerned.

Interaction Meeting Organized

An interaction meeting with faculty, scientists and subject matter specialists from G. B. Pant university, Ranichauri campus was organized on 8th September, 2011 for gaining information about different varieties of *kharif* and *Rabi* crops and fodder and horticultural crops suitable for the Tehri district.



Meeting in progress

Promotion of fish farming periods

Fisheries intervention was made for promotion of fish farming at Shah Nagar village in EGC site and at Mehrampur village in EYC site in Bijnore District of Uttar Pradesh. For this, natural pond was cleaned and lined and finger lings viz., silver carp, Rohu and Mrigal were stocked. For better growth



Visit of PDFSR and THDC official at Shah Nagar village fish pond (East Ganga Canal Command)

these fishes were fed on rice bran, mineral mixture and mustard cake. The total expenditure for setting of all treatments was Rs.7660 year⁻¹. The feeding of mineral mixture and feed materials increased fish production by 10.0 to 54.6%.

CAPACITY BUILDING

Dr. N. Subash (Sr. Scientist, Agricultural Meteorology) and Dr. Mohammad Shamim (Scientist, Agricultural Meteorology) have been selected to be the part of SAARC-Australia Project on 'Developing capacity in cropping systems modelling to promote food security and the sustainable use of water resources in South Asia' aimed at building capacity in farming systems modelling organised by SAARC Agriculture Centre (SAC), Dhaka. The project will be undertaken by CSIRO's Sustainable Agriculture Flagship, in collaboration with the International Rice Research Institute (IRRI). The main interface with SAARC will be through the SAARC Agriculture Centre (SAC). Given the resources available and considering the 2-year project timeframe as well as recognizing SAC's mandate, this project will capitalize on SAC's core capability in convening and executing multi-country training courses and workshops, as well as fostering multilateral collaboration across SAARC Member States. The 2-yr project will provide a series of training workshops to candidates, underpinned by a program of associated

experimental activities designed to obtain quality datasets for modeling purposes and to deepen candidates' skills and knowledge in data acquisition and participatory on-farm techniques.

The research capacity developed by the project will translate into better defined and more appropriately targeted crop and water management practices to be evaluated with more confidence and within shorter timeframes. In this way, recommended practices will reach farmers earlier. Uptake of these practices by farmers is expected to generate reductions in input costs for water (e.g. energy for pumping) while maintaining or increasing crop productivity. The more rapid development of crop and water management practices that maintain food security in the face of decreasing or more expensive access to water will be the main medium term benefit for farmers. Systems analysis approaches and use of modelling will identify feasible options to reduce overuse of water resources, in particular ground water. This is likely to reduce the pressure on ground water extraction.

TRAININGS ATTENDED

- Dr. Sonali P. Mazumdar participated in Short Course on Soil carbon Sequestration for



Dr. Mohammad Shamim and Dr. Sonali P. Mazumdar with other participants at ICRISAT, Hyderabad

Climate Change Mitigation and Food security at CRIDA, Hyderabad during 22nd November - 11 December, 2011.

- Dr. Mohammad Shamim, Scientist (Agricultural Meteorology) and Dr. Sonali P. Mazumdar scientist (Soil Chemistry) have participated in short course on Cropping Systems Models: Applications in Land Resources Management at ICRISAT, Hyderabad during 5-9 December, 2011. This course was jointly organized by the ICRISAT, Hyderabad and University of Florida, U.S.A. During short course, simulations involving crop growth and development, water use, and carbon dioxide were demonstrated. The participants were also described the procedures for collecting and managing minimum data sets for adapting models in application areas.

AWARDS AND RECOGNITIONS

- Dr. V. K. Singh along with Dr. B. S. Dwivedi and Dr. A. K. Shukla received DR. J. S. P. Yadav Memorial Award for Excellence in Soil Science from Indian Society of Soil Science, New Delhi
- Dr. V. K. Singh, Selected as ICAR National Fellow of Indian Council of agricultural Research, New Delhi for research theme entitled “Precision nutrient management using GIS based spatial variability mapping under Upper and Middle Gangetic Plain Zones of India”.
- Dr. N. K. Jat, Dr. B. Gangwar and Shri. Sunil Kumar, awarded the “**Sriram Pruskar**” for the best article entitled “*Kharif Faslon Mein Ekikrat Paushak Tataav Prbandhan*” published in Hindi in June, 2011 issue of ‘*Khad Patrika*’. The award was conferred to them in the Annual Seminar of ‘Fertiliser Association of India’ held at Delhi on 7th, December, 2011.
- Dr. Mohammad Shamim, Scientist (Agricultural Meteorology) under the Programme of Cropping Systems and Resource Management of the Project Directorate for Farming Systems Research, has been honored with the “Best Paper Award” at the 5th National Seminar on Agrometeorology, held at Bidhan Chander Krishi Vishwavidyalya (BCKV), Kalyani



Dr. N. K. Jat, receiving “Sriram’ award from Hon. Minister of State for Chemicals and Fertilizer, Sh. S. K. Jena

(Paschimbanga), India during 9-10 December, 2011. This best paper award was given by the Indian Association of Agrometeorologists for his outstanding research paper entitled ‘Effect of weather parameters on population dynamics of green leaf hopper (*Nephotettix virescence* Distant) and white backed plant hopper (*Sogetella furcifera* Horv) in paddy growing middle Gujarat region’ published in the Journal of Agrometeorology, 10 (2), 172-174.

MONITORING AICRP ON IFS BY THE PROJECT DIRECTOR AT SELECTED CENTERS



Discussion with OFR Agronomists at PDFSR, Modipuram



Visit of IFS centre, Jorhat



Visit of IFS centre, Varanasi and interaction with farmers



Visit to field experiments at Pantnagar

INDEPENDENCE DAY CELEBRATION

Project Director heartily greeted entire PDFSR family on the 64th anniversary of independence. On this moment of national glory, the Directorate celebrated the National Festival with the enthusiasm and fervor. Project Director addressed the staff and their family in the lawn of the office. He urged everyone to contribute at their level best for development of the Directorate and, in turn, the society and the nation. Celebration ended with distribution of sweets.



Celebration of independence day

DISTINGUISHED GUESTS AND VISITORS



Scientists visiting IFS unit



Dr. M. M. Pandey, DDG, Agricultural Engineering and team visiting PDFSR experiments



Dr. N. K. Tyagi, member, ASRB, ICAR, New Delhi visiting PDFSR Farm



Group of farm women from District Pali, Rajasthan on a visit to PDFSR farming system unit

HUMAN RESOURCES

OBITUARY



Dr. A. Sarkar, Principal Scientist (Agronomy) left for heavenly abode on 08-01-2011. He was born on April 01, 1951 at Siliguri District Darjeeling (West Bengal). He joined ICAR service on August 30, 1978. The Directorate suffered huge and irreparable loss in the form

of a renowned agronomist. PDFSR family mourns for Dr. Sarkar and prays almighty to give enough courage to his family to bear with the adversaries.

NEW JOINING

- Dr. N. Subash joined at PDFSR, Modipuram on 2 February, 2011 as Senior Scientist (Agri. Meteorology). Earlier Dr. Subhash was working as Scientist, Senior Scale at ICAR Complex for Eastern Region, Patna, Bihar.
- Mr. Anil Agarwal joined as FAO on 19 March, 2011. Earlier he was working as AFAO in Delhi.
- Dr. A. K. Prusty, Scientist (Fisheries) joined on his transfer from Central Inland Fisheries Research Institute (CIFRI), Regional Centre, Vadodara, Gujarat on 16 May, 2011.
- Dr. Poonam Kashyap, Scientist (Horticulture) joined on 19 March, 2011 on her transfer from Indian Agricultural Research Institute (IARI), Regional Station, Amartara, Shimla, H. P.
- Dr. V. K. Singh, Selected as Principal Scientist and joined on 25 May, 2011. Earlier he was working as Senior Scientist at the PDFSR, Modipuram, Meerut.
- Dr. Harbir Singh joined as Principal Scientist, Agricultural Economics on 27 May, 2011. Before joining PDFSR, he worked as Senior Scientist (Agricultural Economics) for about 13 years at National Centre for Agricultural Economics and Policy Research (NCAP), New Delhi. He has completed in-house as well as externally funded research projects and published research papers in peer-reviewed national and international journals addressing topical issues relating to agricultural technology policy, seed system development and innovations in seed delivery, supply chain and implications of IPRs in agriculture. His current research focus is on the rising cost of farming and sustainability issues in Indian farming systems. He is the life member of the Indian Society of Agricultural Economics, Indian Science Congress Association and Agricultural Economics Research Association (India).

- Dr N. Ravisankar joined this Directorate on 30 May, 2011 upon his selection as Principal Scientist (Agronomy). Prior to this, he worked at Central Agricultural Research Institute, Port Blair, Andaman and Nicobar Islands in the capacity of Scientist and Senior Scientist (Agronomy). His main area work at Port Blair included crop diversification, integrated farming systems for coastal and degraded lands and water resource creation and utilization for multiple use. He is having 45 number of research papers in NAAS rated national and international journals. He is life member in Indian society of Agronomy, Association of Rice Research Workers, Indian Society of Weed Science and Andaman Science Association.
- Dr. R.S. Yadav joined PDFSR to the post of Principal Scientist (Soil Fertility) on 27 August 2011 from NRCAF, Jhansi. He is the recipient of prestigious ICAR team award 'Vasantrya Naik Award for Outstanding Research Applications in Dryland Farming Systems 2010'. He has a wide experience and contributed significantly in soil agroforestry research in both traditional and institutional agroforestry systems and watershed development. He has guided three students for dissertation in M.Sc. (Agroforestry) and one student for degree of Ph. D (Agroforestry).
- Dr. Sudhir Kumar, Scientist (Plant Physiology), Joined PDFSR, Modipuram on 5 September 2011 after completing foundation course from NAARM, Hyderabad. Before joining ARS system, he worked in the field of research under artificial environment. He is Ph.D from IARI, New Delhi with area of specialization in abiotic stress and climate change

PROMOTIONS

- Dr. Prem Singh, promoted to Principal Scientist from Senior Scientist retrospectively from 01-01-2008.

- Dr S.P. Singh , Sr. Scientist (Agril. Economics) has been promoted as Principal Scientist (Agril. Economics) w.e.f 8-12-2011.
- Shri Jatakant promoted to the post of Assistant on 02-11-2011.
- Shri Prem Singh promoted to the post of UDC on 02-11-2011.
- Shri Attar Singh promoted to the post of Personal Secretary on 10-03-2011.

TRANSFER

- Mr. T.C. Sharma, AF&AO has been relieved from at PDFSR, Modipuram on 19-03-2011 on his selection to the post of FAO, DWR, Karnal, Haryana.
- Shri Suryakant, Personal Secretary, was stand relieved from the Project Directorate on 09-02-2011 to join at NIAM, Baramati as per the directions of the NRM Division, ICAR, New Delhi.

RETIREMENT

- Dr. Devendra Singh, Principal Scientist (Crop Physiology) has been retired from ICAR service on 28-02-2011.



Dr. Kamta Prasad presenting bouquet to Dr. D. Singh on his retirement

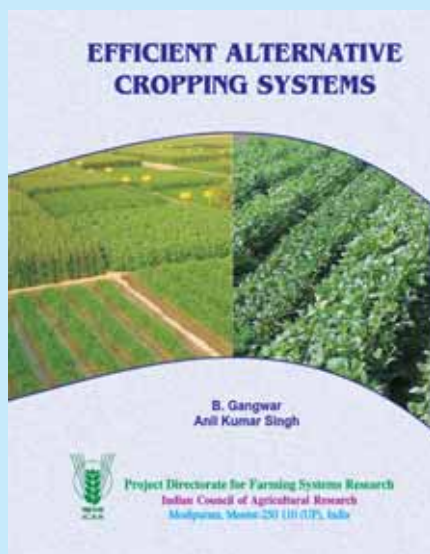
- Dr. N. D. Shukla, Senior Scientist (Agricultural Economics) got superannuation from the Council Services on 31 12-2011

PDFSR PUBLICATIONS IN THE YEAR 2011

S. No.	Title	Authors
1.	Sulphur Management in crops and Cropping Systems	V. K. Singh and B. Gangwar
2.	Efficient Alternative Cropping Systems	B. Gangwar and Anil Kumar Singh
3.	Cotton based cropping systems	Devendra Singh, S. P. Mazumdar, B. Gangwar and Vipin Kumar
4.	<i>Dhan-Gahun Phasal Cakra ki Samasyayn avum Samadhan</i> (in hindi)	B. Gangwar, D. K. Pandey and V. P. Chaudhary
5.	Integrated farming system models for small farm holders of western plain zone of Uttar Pradesh	J. P. Singh, B. Gangwar, D. K. Pandey and S. A. Kocheward
6.	Vision 2030	Project Director, PDFSR, Modipuram

BOOK REVIEW

Efficient Alternative Cropping Systems; Authors B. Gangwar and Anil Kumar Singh; Published by Project Director, Project Directorate for Farming Systems Research, Modipuram, Meerut, UP, Indi, . p 339.



India has recorded a growth of 360 per cent in food grains since its independence with the use of high yield varieties and combination of improved

management techniques, such as cropping intensity, enhanced use efficiency of fertilizers and improvement of other management tools required at field level. In the present context of National Food Security Bill, 2012, likely to be implemented very soon, the country is required to produce extra food grain under the existing resource base. This book is the outcome of the studies and experiments conducted over the two decades by the Project Directorate For Farming Systems Research through its 69 centers under AICRP-CS involving 37 on-station and 32 on-farm research units spread over 69 NARP zones representing all 15 Agro-climatic zones of the country. The concerted efforts of all Chief Agronomists of the AICRP-CS and its staff led to bring out such a valuable publication. Authors have made commendable efforts to compile and synthesize all available information on cropping systems with special reference to its production potential, yield gap, efficient alternative cropping systems, innovative package of practices and above all the contingency planning for the benefit of all stake holders in agriculture.

FROM PROJECT DIRECTOR'S DESK



With the record production of rice and wheat, India's food grains production is pegged at 250 million tons for 2011-12. Still, to meet the total demand of food grains in the year 2020-2021, we need a growth rate of at least two per cent per year in food production. This has to be contrasted with the average annual rate of only one percent that we achieved during period from 1995-96 to 2004-05. Recently, Prime Minister Dr Manmohan Singh in the ICAR annual day meeting told that India would need

an additional 50 MT of food grains over next 10 years to meet the domestic demand. There is substantial evidence to indicate that significant global warming could lead to harsher winter weather conditions, sharply reduced soil moisture, and more intense winds in certain regions that currently provide a significant fraction of the world's food production. With inadequate preparation, the result could be a significant drop in the human carrying capacities of the present resources base. According to Dr. M. S. Swaminathan, India had tapped only 50 per cent of its production reservoir due to dwindling agriculture lands. It could produce 500 million tonnes of food grains in the next 20 years to meet the increasing population.

The Agriculture and Food Security program is now required to seek innovative research ideas in comprehensive farming systems mode such as access and use of land, water, and other agricultural inputs; the role of information and communication technologies; crop-livestock interactions; agricultural water management; development/identification of new seeds, plants, and farming practices; integrated farming systems that include forests, livestock, and fish; diversified production for the small-scale farm sector; youth engagement in agricultural activities; post-harvest, storage, and processing techniques; women and youth entrepreneurship; product and market development; improved decision-making in food and nutritional security; improved nutrition through agricultural diversification and better access to quality food; food fortification, supplementation, and balanced diets; local nutritional needs; the governance of agri-food systems and linkages between agriculture, nutrition, and health and developing resilience for climate change, soil and water degradation, and other shocks such as food price volatility etc. Further, both the Centre and state government should come out with Land Use Policy and Land Acquisition policies so that productive land may be retained for agricultural production.

Published by: Dr. B. Gangwar, Project Director, Project Directorate for Farming Systems Research (Indian Council of Agricultural Research), Modipuram, Meerut-250 110, India.

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