

From the Director's Desk

Intercropping Pulses in Sugarcane: A Green Pasture



Sugarcane is an important agro-industrial crop and it plays pivotal role in agricultural economy of the country. The sugarcane crop is cultivated in over 5.0 m ha area producing more than 350 million tonnes of cane annually with a productivity level of 70 t/ha. However, there have been fluctuations in area as well as productivity over the years on account of several factors. During last one decade, the declining factor productivity, increasing production cost, yield stagnation, global sugar price volatility posed serious concerns for cane growers and the millers. In view of these concerns and fast changing scenario of market, climate change, global competitiveness, green energy demand, consumer preferences etc., there is a need to diversify sugarcane agriculture through introduction of pulses as an intercrop in sugarcane. The message conveyed through International Year of Pulses 2016 entails to diversify

existing cropping system to produce more quantity of pulses for common people all over the world in order to achieve the nutritional food security in coming years. This further substantiates the need to diversify sugarcane production system by inter-culturing pulses in the wider row spaces in sugarcane crop. Every year, about half of the total cane acreage in India, i.e., 2.5 million ha is being planted with sugarcane and rest half remains under ratoon crop. There is utmost possibility of growing pulses with sugarcane in half of the total cane planted area, i.e., 1.25 million ha annually. This may provide an easy access to more area under pulses in the country. With present level of average pulse productivity in India (785 kg/ha) an additional 1.0 million tonne of pulses could be produced from 1.25 million ha additional pulses area within the country. This will not only save foreign exchange to import pulses but at the same time will also enhance prosperity of providing protein-rich diet to poor and malnourished population of the country. Other benefits like increase in carbon sequestration by addition of biomass and organic matter to the soil, reduction in green house gas emission by fixing atmospheric nitrogen, protection of soil against erosion, improving soil fertility and health, enhanced farm income are inherent in pulses intercropping with sugarcane.

With the above background, it is amply clear that there is a need to diversify cane agriculture with more of pulses as intercrop with sugarcane. To increase pulse area in sugarcane inter-row spaces is not that simple and requires well coordinated efforts of all stakeholders concerned. So far as technology part is concerned, IISR has well tested technology supported by adequate inputs of mechanization to raise pulse crops in sugarcane inter-row spaces. I humbly call upon all the stakeholders including farmers, sugar mills and cane departments to move ahead in this direction for truly honouring the message envisaged in the International Year of Pulses 2016.

- पिछले एक दशक में उत्पादन लागत में वृद्धि, कारकों के उत्पादकता में कमी, मृदा स्वास्थ्य में हास तथा विश्व स्तर पर चीनी के मूल्य में अस्थिरता के कारण चीनी उद्योग तथा गन्ना किसानों के समक्ष गंभीर परिदृश्य उभर कर आया है।
- वर्तमान परिदृश्य में उभरते चुनौतियों का सामना करने के लिए दलहनी फसलों को अन्तः फसल के रूप में अपनाकर गन्ना उत्पादन प्रणाली में विविधीकरण लाना आवश्यक है।
- गन्ने के साथ दलहनी फसलों की अन्तः खेती से लगभग 12.5 लाख हेक्टेयर अतिरिक्त क्षेत्रफल दलहन के अन्तर्गत लाया जा सकता है जिससे लगभग 10.0 लाख टन अतिरिक्त दलहन का वार्षिक उत्पादन देश के अंदर किया जा सकता है।
- ऐसा करके प्रति वर्ष दलहन आयात पर निर्भरता कम करके विदेशी मुद्रा में बचत किया जा सकता है।
- अन्तर्राष्ट्रीय दलहन वर्ष 2016 के उद्देश्यों की प्राप्ति के दिशा में यह एक महत्वपूर्ण योगदान होगा।

SECTORAL NEWS: SUGARCANE AND SUGAR INDUSTRY

Annual Convention of NISSTA and Technical Expo 2016

Two days Annual Convention of North Indian Sugarcane and Sugar Technologists' Association (NISSTA) and Technical Expo 2016 was jointly organized by ICAR-Indian Institute of Sugarcane Research, Lucknow and NISSTA on April 29-30, 2016. Shri Pravir Kumar, IAS,



Agricultural Production Commissioner, Govt. of Uttar Pradesh was the Chief Guest in the inaugural session. Highlighting the important role of sugarcane crop in the economic development of Uttar Pradesh, Sh. Kumar expressed satisfaction over the improved recovery during the crushing season 2015-16 and urged the sugarcane farmers to adopt innovative technologies such as improved



varieties and intercropping to maximize their farm income. Shri Narendra Mohan, Director, National Sugar Institute, Kanpur appreciated the efforts for large scale adoption of improved sugarcane varieties in Uttar Pradesh which also gave dividend in terms of high sugar recovery. Shri Mohan urged the scientists to develop climate resilient sugarcane varieties.

Explaining the important role of environment as well as of variety in improving recovery, Dr. Bakshi Ram, Director, ICAR-Sugarcane Breeding Institute, Coimbatore credited the higher recovery of 0.36% to the adoption of the improved sugarcane variety Co 0238 which has covered more than 4 lakh hectare area in U.P.

In his introductory remarks, Dr. Ram Murti Singh, President, NISSTA explained the need of establishing NISSTA for the betterment of the sugarcane farmers and sugar industry in northern region of the country. Shri Anil Kumar Shukla, Secretary, NISSTA deliberated on the theme of the convention. Dr. A.D. Pathak, Director, ICAR-IISR, Lucknow welcomed the participants and presented a brief accomplishments of the Institute. Dr. A.K. Sah, Organizing Secretary of the event presented the detail accounts of IISR technologies for cane growers and industry. On this occasion, a Technical Expo to showcase the latest innovations done by the industry, Research Institutes and supporting organizations was also organized. More than 250 delegates participated in this convention.

Few eminent personalities who contributed significantly for the development of sugarcane and sugar sector in the country were bestowed with Awards. Lifetime Achievement Awards were given to Shri Arvind Prasad, Director, LH Sugar Factories Ltd., Pilibhit and Shri C.B. Patodia, Director, Birla Sugar Group. Mr. Pankaj Rastogi, Chief Operating Officer, Dalmia Bharat Sugar Industries Ltd., recieved Industry Excellence Award of Leadership. Dr. Bakshi Ram, Director, ICAR-Sugarcane Breeding Institute, Coimbatore was conferred with Best Innovator of the Year 2016 Award. Dr. A.D. Pathak, Director, ICAR-Indian Institute of Sugarcane Research, Lucknow was honoured with Best Researcher of the Year 2016 Award, while Dr. A.K. Sah, Principal Scientist, ICAR-IISR was conferred with Excellence in Conference Management Award.

- श्री प्रवीर कुमार, कृषि उत्पादन आयुक्त, उत्तर प्रदेश सरकार ने निस्टा के वार्षिक सम्मेलन का उद्घाटन किया तथा अपने उद्बोधन में उन्होंने किसानों को गन्ना की उन्नत किस्में तथा सह-फसल उत्पादन तकनीक अपनाकर खेती से आय बढ़ाने का सलाह दिया।
- उद्घाटन सत्र में श्री नरेन्द्र मोहन, निदेशक, राष्ट्रीय शर्करा संस्थान, कानपुर; डॉ. बक्षी राम, निदेशक, गन्ना प्रजनन संस्थान, कोयम्बतूर; डॉ. ए.डी. पाठक, निदेशक, भारतीय गन्ना अनुसंधान संस्थान, लखनऊ; डॉ. राम मूर्ति सिंह, अध्यक्ष, निस्टा ने अपने विचार रखे।
- वार्षिक सम्मेलन के आयोजन सचिव डॉ. ए.के. साह, प्रधान वैज्ञानिक ने संस्थान की तकनीकों पर विस्तृत जानकारी अपने व्याख्यान में दिया।
- सम्मेलन के समापन सत्र में उत्तर प्रदेश के गन्ना आयुक्त श्री विपिन कुमार द्विवेदी ने गन्ना शोध तथा चीनी उद्योग में महत्वपूर्ण योगदान के लिए वैज्ञानिकों तथा प्रबंधकों को पुरस्कार प्रदान किया।

Seminar on Sustainable Agriculture in Climate Change Scenario organized

A Seminar on Sustainable Agriculture in Climate Change Scenario was organized under the aegis of NEFORD and ICAR-Indian Institute of Sugarcane Research, Lucknow on March 19, 2016. It was recommended that crop varieties tolerant to heat and salinity stress and resistant to flood and

also organized.



INTERNATIONAL COLLABORATION

Visit of the Indonesian Delegation of State-owned Sugar Factories

A four member Indonesian Delegation of state-owned sugar factories under the Chairmanship of Mr. Subiyono,

drought have already been developed and these varieties need to be promoted at faster speed following innovative transfer of technology approaches. There is need to promote climate-ready crop varieties, energy, water, labour, time and cost saving improved crop management practices in big way.

In the changing climate scenario and growing instability in agriculture, community managed efforts could be more effective. Promotion of agro - forestry and horticultural trees and high biomass food and non-food crop diversity for higher CO₂ sequestration and moderating farm temperature will also help in maintaining different strata of soil moisture as well as soil bio-diversity.

Workshop on Engineering Interventions organized

Lucknow Chapter of the Indian Society of Agricultural



President & Director of PTPN X (Sugar Mill) along with three other Directors, viz., Mr. Tarcicius Sutarjanta, Mr. Djoko Santoso and Mr. Mohammad Sulton visited ICAR-IISR, Lucknow on February 19, 2016. The delegation was accompanied by four other members to provide their logistic support. The delegation was briefed with IISR activities and an interactive session organised on this occasion. The delegation interacted with Dr. A.D. Pathak, the Director of the Institute and other scientists. The delegation presented an overview of sugarcane cultivation and highlighted the problems of low cane yields in Indonesia. The President, Mr. Subiyono also highlighted that Indonesia meets most of its sugar demand from imports and is interested to raise the domestic production of sugar. The delegation highlighted that very old varieties are being grown in Indonesia and there is a need to replace these varieties. The delegation expressed their desire to have collaborative programme with ICAR-IISR for enhancing cane yield in Indonesia. After discussion, it was agreed to formulate a collaborative sugarcane research programme between Indonesia and ICAR-IISR, Lucknow for strengthening breeding research in Indonesia, rejuvenation of old varieties and the capacity building of Indonesian researchers.



Engineering and ICAR-Indian Institute of Sugarcane Research, Lucknow jointly organized one-day workshop on "Engineering Interventions for increasing Agricultural Productivity, Farmers' Income and Employment Generation" at ICAR-IISR, Lucknow, on February 02, 2016. The workshop was convened by Dr.S.I. Anwar, Principal Scientist at the Institute. At this occasion, Annual General Body Meeting of Lucknow Chapter of Indian Society of Agricultural Engineering was

Visit of South African Cane Growers

A ten member delegation of National Cane Growers Association, South Africa under the Chairmanship of Mr. Yaga Govender, the President of the Association visited the ICAR-Indian Institute of Sugarcane Research, Lucknow on February 25, 2016. An interactive session was also organized wherein the Heads of the Divisions and a few invited scientists participated in the discussion.



The President of the Association gave a brief glimpse of the sugarcane cultivation scenario and highlighted the major constraints in sugarcane cultivation in the South Africa. The delegation highlighted that sugarcane cultivation in South Africa is generally rain fed and about 95% cane is burnt before harvesting. The use of ripeners is being carried out and there is problem of thrips and borers as well as smut, rust and mosaic diseases. It was also highlighted during discussion that the biocontrol of insect pests and diseases is still on experimental basis. The crop is cultivated on minimum tillage and 7 consecutive ratoon crops are taken. The yield levels vary from 60-70 t/ha. The IISR scientists emphasized for avoiding burning of cane before harvesting. The delegation was apprised of the major insect-pests and diseases in sugarcane and the modern management practices being followed in India. The Institute efforts for mechanizing sugarcane cultivation were also highlighted. The delegation was also apprised about the regular training programmes being organized by the Institute during July and advised that sugarcane workers from South Africa should attend the training programmes organized by the Institute.

STEP FORWARD FOR THE WELL-BEING OF SUGARCANE & SUGAR SECTOR

माननीय कृषि एवं किसान कल्याण मंत्री भारत सरकार द्वारा मोतीपुर में गुड़ प्रशिक्षण इकाई का उद्घाटन

दिनांक 05 मार्च, 2016 को श्री राधा मोहन सिंह जी, माननीय कृषि एवं किसान कल्याण मंत्री, भारत सरकार द्वारा भाकृअनुप-भारतीय गन्ना अनुसंधान संस्थान क्षेत्रीय केन्द्र, मोतीपुर में गुड़ प्रशिक्षण इकाई का उद्घाटन तथा कृषक प्रशिक्षण भवन का शिलान्यास किया गया। इस अवसर पर एक वैज्ञानिक – कृषक परिचर्चा का भी आयोजन हुआ जिसमें माननीय मंत्री जी ने किसानों को सम्बोधित किया। मंत्री जी ने अपने उद्बोधन में किसानों की आय बढ़ाने के लिए कृषि उत्पादों के प्रसंस्करण पर जोर दिया और इस दिशा में मोतीपुर केन्द्र में गुड़ इकाई की शुरुआत को इस क्षेत्र के गन्ना किसानों के लिए वरदान बताया। अपने उद्बोधन में उन्होंने मृदा स्वास्थ्य, जैविक खेती, हर खेत को पानी, स्वस्थ बीज तथा मेरा गाँव-मेरा गौरव, फसल बीमा जैसे भारत सरकार के महत्वाकांक्षी

योजनाओं द्वारा किसानों को प्राप्त होने वाले लाभ पर प्रकाश डाला। माननीय मंत्री जी द्वारा गन्ना एवं गुड़ उत्पादन तकनीक पर प्रकाशित 5 प्रसार साहित्यों का विमोचन भी किया गया। कार्यक्रम की अध्यक्षता कृषि शोध एवं शिक्षा विभाग के सचिव तथा भारतीय कृषि अनुसंधान परिषद के महानिदेशक डॉ. त्रिलोचन महापात्र ने किया। परिषद के उपमहानिदेशक (फसल विज्ञान), डॉ. जीत सिंह संधू ने भी किसानों को संबोधित किया। डॉ. ए.डी. पाठक, निदेशक, भारतीय गन्ना अनुसंधान संस्थान, लखनऊ ने सभी अतिथियों का स्वागत किया तथा मोतीपुर केन्द्र द्वारा किए जा रहे शोध प्रयासों पर प्रकाश डाला। क्षेत्र के लगभग 1000 किसानों ने इस परिचर्चा में भाग लिया। कार्यक्रम के आयोजन सचिव डॉ. ए.के. साह, प्रधान वैज्ञानिक, भारतीय गन्ना अनुसंधान संस्थान, लखनऊ ने माननीय मंत्री महोदय तथा अन्य गणमान्य अतिथियों एवं किसानों को कार्यक्रम के समापन पर धन्यवाद ज्ञापित किया।



गृहमंत्री, भारत सरकार द्वारा प्रधानमंत्री फसल बीमा योजना जागरूकता कार्यक्रम का उद्घाटन

2 अप्रैल, 2016 को श्री राजनाथ सिंह जी, माननीय गृहमंत्री, भारत सरकार द्वारा 'प्रधानमंत्री फसल बीमा योजना जागरूकता कार्यक्रम' का उद्घाटन भाकृअनुप- भारतीय गन्ना अनुसंधान संस्थान, लखनऊ में किया गया। अपने उद्घाटन उद्बोधन में माननीय गृहमंत्री ने देश के किसानों के कल्याण के लिए भारत सरकार द्वारा आरम्भ की गयी विभिन्न महत्वाकांक्षी योजनाओं की जानकारी दी। लखनऊ, सीतापुर, उन्नाव, आँरव्या, हरदोई व रायबरेली जिलों से आए किसानों, वैज्ञानिकों तथा अधिकारियों को सम्बोधित करते हुए माननीय मंत्री महोदय ने बताया कि प्रधानमंत्री कृषि सिंचाई योजना में इस वर्ष देश के 100 जिलों का लक्ष्य निर्धारित किया गया है तथा इस वर्ष के अन्त तक इन जिलों की सिंचाई योजना तैयार हो जाएगी। प्रधानमंत्री फसल बीमा योजना के मुख्य बिन्दुओं की चर्चा करते हुए उन्होंने बताया कि अपनी फसलों का बीमा कराने हेतु खरीफ फसलों के लिए 2 प्रतिशत, रबी फसलों के लिए 1.5 प्रतिशत तथा उद्यान व व्यावसायिक फसलों के लिए मात्र 5 प्रतिशत का अंशदान देना होगा जिसे लघु एवं सीमान्त कृषक भी सुगमता से अदा करके योजना का लाभ उठा सकते हैं। इस योजना में अंशदान का शेष भाग सरकार वहन करेगी।

इस अवसर पर चार प्रगतिशील कृषकों जिनमें दो कृषक महिलाएं भी सम्मिलित थीं, को अपनी सीमित जोत से अधिकतम आय अर्जित करने हेतु

मुख्य अतिथि द्वारा 'दीन दयाल अन्त्योदय किसान सम्मान' से सम्मानित किया गया। माननीय मंत्री जी ने इस अवसर पर आयोजित कृषि प्रदर्शनी में भारतीय कृषि अनुसंधान परिषद् के संस्थानों व अन्य संस्थानों के स्टालों का भ्रमण कर वैज्ञानिकों तथा विकास अधिकारियों से विचार-विमर्श भी किया। समारोह के विशिष्ट अतिथि, श्री कौशल किशोर, माननीय सांसद, मोहनलालगंज संसदीय क्षेत्र ने अपने सम्बोधन में फसलों के बहुराष्ट्रीय कम्पनियों द्वारा विकसित संकर बीजों के स्थान पर स्थानीय रूप से विकसित देसी प्रजातियों के बीज को बढ़ावा देने पर बल दिया। मुख्य अतिथि एवं अन्य अतिथियों का स्वागत करते हुए भाकृअनुप- भारतीय गन्ना अनुसंधान संस्थान, लखनऊ के निदेशक, डा. ए.डी. पाठक ने संस्थान की प्रमुख उपलब्धियों को रेखांकित करते हुए गन्ना किसानों के कल्याण के लिए मृदा स्वास्थ्य कार्ड वितरण योजना, मेरा गाँव-मेरा गौरव, उद्यमिता कौशल विकास कार्यक्रम जैसी कई योजनाओं का जिक्र किया। डा. यू. एस. गौतम, निदेशक, कृषि तकनीक अनुप्रयोग अनुसंधान संस्थान, कानपुर ने स्थान विशिष्ट प्रौद्योगिकी के प्रदर्शन एवं इसे लोकप्रिय करने तथा कृषकों, कृषक महिलाओं एवं अन्य भागीदरों के प्रशिक्षण हेतु उत्तर प्रदेश के कृषि विज्ञान केन्द्रों की भूमिका पर विस्तार से जानकारी दिया। कार्यक्रम के आयोजन सचिव डॉ. एस. एन. सिंह एवं डॉ. ए.के. साह ने इस अवसर पर आयोजित एक किसान सम्मेलन एवं खरीफ पूर्व कार्यशाला में भाग ले रहे 4,000 कृषकों को फसल उत्पादन तकनीक तथा संस्थान द्वारा चलाए जा रहे कार्यक्रम पर जानकारी प्रदान किया।



Development of deep furrow sugarcane cutter planter with herbicide spraying attachment

Herbicide spraying attachment was developed and integrated with deep furrow sugarcane cutter planter. The new prototype performs all the unit operations involved in sugarcane planting and spraying of pre-emergence herbicide simultaneously, in a single pass. It saves the cost of spraying operation of pre-emergence herbicide which otherwise is performed separately after sugarcane planting.

- शाकनाशी छिड़काव यंत्र युक्त गहरी नाली में गन्ना बुआई मशीन का विकास किया गया।
- गन्ना बुआई के समय ही शाकनाशी रसायन का जमाव-पूर्व प्रयोग इस मशीन से हो जाता है जिससे लागत में बचत होती है।

Prototype Feasibility Testing (PFT) of tractor operated reaper binder

Tractor operated reaper binder performs harvesting and binding of cereal crops like wheat and paddy in a single operation. The preliminary testing of this machine was carried out at the Institute farm and farmers' fields for harvesting of wheat crop in about 1.0 ha area. The effective width of machine was 90-105 cm. The field capacity of the machine was 0.20-0.31 ha/h at 2.2-3.0 km/h forward speed. The height of cut was 6-10 cm.



INSTITUTE HIGHLIGHTS

Boosting Cane Yield through PGR application

Physiological efficiency of spring planted crop was improved through exogenous applications of *Ethrel* (at planting stage) and *Gibberellic* acid (at 90, 120 and 150 DAP). *Ethrel* induced faster heterotrophic to autotrophic transition at planting stage which resulted in early crop establishment and higher initial plant population (45 DAP). GA_3 increased sink strength through induction of horizontal growth at 60 DAP and improved vertical growth at 90, 120 and 150 DAP. The combined impacts of both growth hormones led to manifestation of enhanced plant population culminating in NMC of 3.01 lakh ha^{-1} with cane yield of 255 t ha^{-1} against NMC of 1.32 ha^{-1} with a cane yield of 84.69 t ha^{-1} in control.

XXII RAC Meeting of ICAR-IISR, Lucknow Organized

XXII Meeting of RAC of ICAR-IISR was held under the Chairmanship of Dr. A.N. Mukhopadhyay, Ex- Vice Chancellor, AAU, Jorhat at ICAR-IISR, Lucknow on June 29-30, 2016. Shri Vipin Kumar Dwivedi, Cane Commissioner, Uttar Pradesh was also present as a special invitee in the meeting. Dr. N. Balasundaram, Ex-Director, ICAR-Sugarcane Breeding Institute, Coimbatore; Dr. D.G. Hapase, Ex-Director, V.S.I., Pune; Dr. A.S. Patil, Ex-Director, V.S.I., Pune; Dr. Surendra Singh, Ex- Project Coordinator, Farm Implement & Machinery; Dr. R.K. Singh, Assistant Director General (Commercial Crops), ICAR, New Delhi; Shri J.L. Jain, General Manager (Cane), Harinagar Sugar Mills, Harinagar (Bihar); Shri K.P.S. Rath, Farmers representative from Muzaffarnagar (UP) were participated as members. Besides Dr. A.D. Pathak, Director, Dr. S.N. Singh, Principal Scientist (Agronomy) and Head, KVK, Lucknow as Member-Secretary, Project Coordinator (Sugarcane), Heads of Divisions and Scientists from ICAR-IISR were also present. On this occasion, an innovative farmer Prof. C.S. Tiwari was felicitated and honoured by the RAC for his outstanding contribution in sugarcane cultivation in Narsinghpur district of Madhya Pradesh. All the Heads of the Divisions and Incharges presented their research achievements made during 2015-16. The RAC appreciated the efforts of the scientists of the Institute.

Group Meeting of RAC of ICAR-IISR, Lucknow

A Group Meeting on “Recasting of Bio-fertilizers and Bio-pesticides Programme of ICAR-IISR, Lucknow was held on June 27, 2016 at the Institute under the Chairmanship of Dr. A.N. Mukhopadhyay, Ex- Vice Chancellor, AAU, Jorhat. The meeting was attended by Dr. A.D. Pathak, Director, ICAR-IISR; Dr. S.N. Singh, Principal Scientist (Agronomy) and Member-Secretary, RAC and other scientists from ICAR-IISR; BHU, Varanasi; CSIR-CIMAP, Lucknow; ICAR-IARI, New Delhi; KRIBHCO, Phulpur, Allahabad. It was recommended that there was an emergent need to follow the strengthened and standard protocols and techniques with proper identification/ characterization of the microbes for quality biofertilizer production. The Institute should concentrate on making liquid bio-manure, using cell retardants for longer maintenance of the cultures and reviving the cultures with specific compounds. The compound identified at BHU, Varanasi can be used by the laboratories of the Institute. Thermo-tolerant strains of microbes need to be developed, and the same can be tried by spraying on well decomposed press mud from sugar factories before applying it to sugarcane fields.

Scientific Advisory Committee Meeting of KVK, ICAR-IISR, Lucknow Organized

A Scientific Advisory Committee Meeting of KVK, ICAR-IISR, Lucknow was organized under the chairmanship of Dr. A.D. Pathak, Director, ICAR-IISR, Lucknow on March 11, 2016 in the Library Conference Hall of the Institute. Achievements of KVK, ICAR-IISR, Lucknow for 2015-16 and action plan for 2016-17 was presented before the members and chairman of the meeting. All the members of the meeting suggested technical guidance for a better output.

- कृषि विज्ञान केन्द्र, भारतीय गन्ना अनुसंधान संस्थान का वैज्ञानिक सलाहकार समिति की बैठक संस्थान के निदेशक डॉ. ए. डी. पाठक की अध्यक्षता में दिनांक 11 मार्च, 2016 को संपन्न हुई।
- इस बैठक में वर्ष 2015-16 के उपलब्धियों तथा वर्ष 2016-17 के लिए कार्य नियोजन पर चर्चा किया गया।



Annual Zonal Workshop on KVKs of Uttar Pradesh and Uttarakhand Organized

XXIII Annual Zonal Workshop on KVKs of Uttar Pradesh and Uttarakhand was inaugurated by Shri Ram Naik Ji, Hon'ble Governor of Uttar Pradesh at ICAR-Indian Institute of Sugarcane Research, Lucknow on May 26, 2016. While addressing the gathering, Hon'ble Sh. Ram Naik Ji highlighted the significance of farmers and farming in Uttar Pradesh, which has the potential to guide the agricultural development of the country. Hon'ble Sh. Naik Ji added that KVK as a grass root level institution have immense potential for strengthening agriculture and related industries for bringing prosperity to the villages which ultimately may culminate to national prosperity. Hon'ble Sh. Naik urged the KVK scientists to go to

the fields to demonstrate the impact of the improved scientific farm technologies. He also appreciated the efforts of ICAR-Indian Institute of Sugarcane Research in developing technologies.

Dr. A.K. Singh, Deputy Director General (Agricultural Extension), ICAR highlighted the major schemes of ICAR launched for the benefit of farmers like *Mera Gaon Mera Gaurav*, *Farmers' First*, *ARYA*, *Pre-Kharif and Pre-Rabi Kisan Sammelan* and *Pradhan Mantri Fasal Beema Yojana*. Dr. Mangala Rai, Ex. Secretary, DARE & Ex. DG, ICAR and VC, GBPUA&T, Pantnagar highlighted the role of KVK scientists in addressing the problems. Welcoming the Chief Guest and delegates, Dr. U.S. Gautam, Director, ICAR-ATARI, Kanpur highlighted the major activities of the three days event.



- उत्तर प्रदेश तथा उत्तराखंड के कृषि विज्ञान केन्द्रों की 23वीं वार्षिक क्षेत्रीय कार्यशाला का उद्घाटन उत्तर प्रदेश के राज्यपाल माननीय श्री राम नाईक जी द्वारा 26 मई, 2016 को संस्थान के प्रेक्षागृह में किया गया।
- उद्घाटन सत्र में भारतीय कृषि अनुसंधान परिषद के उपमहानिदेशक (कृषि प्रसार) डॉ. ए. के. सिंह, पंतनगर कृषि विश्वविद्यालय के कुलपति डॉ. मंगला राय, अटारी, कानपुर के निदेशक डॉ. यू. एस. गौतम, भारतीय गन्ना अनुसंधान संस्थान के निदेशक डॉ. ए.डी. पाठक ने उपस्थित प्रतिभागियों को संबोधित किया।

TRANSFER OF TECHNOLOGY

यंत्र निर्माताओं के साथ समझौता ज्ञापन

भारतीय गन्ना अनुसंधान संस्थान तथा अखिल भारतीय शोध परियोजना समन्वय (पोस्ट-हारवेस्ट अभियंत्रण प्रौद्योगिकी) लखनऊ ने मेसर्स पटेल निर्माता कंपनी, राजकोट एवं मेसर्स प्रोजेक्ट एण्ड प्रोसेस इंजीनीयर्स प्राइवेट लिमिटेड, लखनऊ के साथ संस्थान द्वारा विकसित गन्ना एवं गुड़ यंत्रों के व्यावसायिक उत्पादन के लिए समझौता ज्ञापन पर हस्ताक्षर किया।

उद्यमियों के साथ समझौता ज्ञापन

भारतीय गन्ना अनुसंधान संस्थान तथा अखिल भारतीय शोध परियोजना समन्वय (पोस्ट-हारवेस्ट अभियंत्रण प्रौद्योगिकी) लखनऊ ने तीन कृषक उद्यमियों के साथ तीन कड़ाही वाला आई.आई.एस.आर. आदर्श गुड़ इकाई स्थापित करने के लिए समझौता ज्ञापन पर हस्ताक्षर किया।

Frontline demonstrations of paired row trench planter and deep furrow sugarcane planter

Frontline demonstrations of IISR tractor operated paired

row/trench planter was conducted at the farmers' fields in Sitapur district (2.0 ha) and in Muzaffarnagar district (1.0 ha). Demonstration of IISR deep-furrow sugarcane cutter planter at farmers' fields was conducted in village Navala, Muzaffarnagar on May 06, 2016 in the gracious presence of Dr. Sanjeev K. Balyan, Honorable Minister of State for Agriculture & Farmers' Welfare, Govt. of India.

गन्ना एवं गुड़ उत्पादन में उद्यमिता विकास

‘गन्ना एवं गुड़ उत्पादन में उद्यमिता विकास – एक नया आयाम’ विषय पर एक दिवसीय कृषक प्रशिक्षण एवं गोष्ठी का आयोजन संस्थान के क्षेत्रीय केंद्र, मोतीपुर (बिहार) में मार्च 05, 2016 को किया गया। इस कार्यक्रम में माननीय कृषि एवं किसान कल्याण मंत्री भारत सरकार श्री राधा मोहन सिंह जी मुख्य अतिथि थे। भारतीय कृषि अनुसंधान परिषद के महानिदेशक डॉ. त्रिलोचन महापात्र जी कार्यक्रम में उपस्थित थे। इस प्रशिक्षण कार्यक्रम में क्षेत्र के लगभग 4000 किसानों ने भाग लिया।



प्रौद्योगिकी एवं मशीन प्रदर्शनी मेला

दिनांक 18 मार्च, 2016 को संस्थान परिसर में मेला का आयोजन किया गया था। इस मेला में उत्तर प्रदेश के विभिन्न जनपदों से लगभग 650

किसानों ने भाग लिया। मेला में संस्थान द्वारा विकसित गन्ना खेती यंत्रों तथा गुड़ उत्पादन तकनीकों को प्रदर्शित किया गया।



कौशल विकास प्रशिक्षण / Skill Development Training

विषय / Topic	अवधि / Duration	प्रायोजक / Sponsoring agency	प्रतिभागी समूह / Clientele Groups
Improved cane varieties and planting methods for higher yield of sugarcane.	February 10-11, 2016	DAC, Ministry of Agriculture and Farmers' Welfare, Govt. of India	20 Master trainers
Integrated nutrient and weed management in Sugarcane.	February 15-16, 2016	DAC, Ministry of Agriculture and Farmers' Welfare, Govt. of India	20 Master trainers
Inter cropping options in sugarcane for enhancing system productivity and profitability.	February 23-24, 2016	DAC, Ministry of Agriculture and Farmers' Welfare, Govt. of India	20 Master trainers
Integrated pests and diseases management in sugarcane.	February 25-26, 2016	DAC, Ministry of Agriculture and Farmers' Welfare, Govt. of India	20 Master trainers
Mechanisation and post harvest management in sugarcane.	March 27-28, 2016	DAC, Ministry of Agriculture and Farmers' Welfare, Govt. of India	20 Master trainers
Sugarcane Production Technology	February 8-10, 2016	Director of Agriculture, Nilakottai, Dindigul District, Tamil Nadu	16 Farmers
गन्ना उत्पादन तकनीक	फरवरी 1-3, 2016	आत्मा, सिवनी (म0प्र0)	14 कृषक
गन्ना उत्पादन की उन्नत कृषि तकनीक	फरवरी 16-20, 2016	आत्मा, मोतिहारी (बिहार)	30 कृषक
Sugarcane Production Technology	March 10-12, 2016	Assistant Director of Agriculture, Paramkudi, Ramanathapuram District, Tamil Nadu	20 Farmers
गन्ना शोध एवं विकास में प्रगति	मई 30 - जून 19, 2016	मेवार विश्वविद्यालय (राजस्थान) के छात्र	25 कृषि स्नातक छात्र
गन्ना शोध एवं विकास में प्रगति	जून 20-24, 2016	बनारस हिन्दू विश्वविद्यालय के छात्र	39 कृषि स्नातक छात्र
गन्ना उत्पादन एवं प्रबंधन	मई 11-12, 2016	एमसीईडी. भन्डारा (महाराष्ट्र)	35 कृषक
Integrated Pest Management in Sugarcane	April 21-22, 2016	ATMA, Annagramam Block, Cuddalore District, Tamil Nadu	20 Farmers



कृषि प्रदर्शनी का आयोजन



National Science Day celebrated

National Science Day was celebrated at the Institute on February 28, 2016. On this occasion, Dr. M.M. Roy, Principal

Highlighting the present accomplishments of the Institute, Dr. A.D. Pathak, Director informed that two genotypes developed by the Institute have shown promise in the All



Scientist, Division of Plant Physiology and Biochemistry delivered a talk on "Water : Status, Issues and Options for Agricultural Use in India", which was attended by all the Scientists, Technical, Administrative, Research Associates, Research Fellows, Ph.D./PG/UG students and trainees.

Foundation Day Celebration

The 65th Foundation Day of ICAR-Indian Institute of Sugarcane Research was celebrated on February 16, 2016. Dr. S. Solomon, Former Director, IISR was the Chief Guest on the occasion. In his address, Dr. Sushil Solomon highlighted the need for developing suitable technologies for reducing the water requirement of sugarcane and also emphasised on carbon sequestration and carbon trading.

India Coordinated trials and are expected to release soon. He also added that thirteen genotypes developed by the IISR are in various stages of testing under AICRP on Sugarcane. He expressed satisfaction over increased yield of sugarcane in Uttar Pradesh from 60 to 65 t/ha along with the sugar recovery over 11 per cent. Similarly, the yield of sugarcane has also been increased in neighbouring state of Bihar to 62 t/ha from 46 t/ha due to seed production programme being executed by the Institute. Dr. Pathak informed that 64 villages have been adopted under *Mera Gaon Mera Gaurav* programme of Govt. of India and the farmers of these villages are reaping benefits of adopting improved production technologies.

Visit of the Secretary, DARE and DG, ICAR

Dr. Trilochan Mohapatra, Secretary, DARE and Director General, ICAR visited the Institute on June 8, 2016. Dr. Mohapatra visited laboratories and workshop of the Institute and got acquainted with various research and developmental activities of the Institute. Addressing the scientists and staff of the Institute, he appreciated the efforts of the scientists working on biological control, agricultural engineering and AICRP on Sugarcane. He urged upon the scientists to assess the requirement of sugarcane in the country for the next twenty years in view of changing scenario of climate change, biodiversity, insect-pests and diseases challenges and soil and water status. Expressing the concern of Hon'ble Prime Minister regarding doubling the income of Indian farmers in five years, Dr. Mohapatra urged the scientists to device ways in this regard. He called upon them to develop stress tolerant varieties of sugarcane and develop linkage between processors and market. Dr. Mohapatra emphasized that there is a need of intensive research in the field of integrated pest and disease management by developing efficient strains

of *Trichogramma* or discovering new bio-control agents. Before commercialization of any proven technology, it needs to be properly validated and economically analyzed. He also suggested that entrepreneurship development programmes may be chalked out by the Institute and should be implemented in order to attract rural youth in agriculture. Dr. Mohapatra also called upon the young researchers to take new challenges as the opportunities and devote more time for the scientific pursuits with full potential.

Dr. J.K. Jena, Deputy Director General (Fisheries), ICAR; Dr. S.K. Chaudhary, Assistant Director General (Soils), ICAR; Dr. P.C. Sharma, Director, ICAR-Central Soil Salinity Research Institute, Karnal and Dr. A.N. Mukhopadhyay, Ex. Vice-Chancellor, Assam Agricultural University, Jorhat were also present during the visit. Dr. A.D. Pathak, Director, ICAR-Indian Institute of Sugarcane Research, Lucknow welcomed the DG, ICAR & other dignitaries and briefed about the major developments at the Institute.



HUMAN RESOURCE DEVELOPMENT

Awards

Dr. A.K. Sah, Dr. A.K. Singh (Engineer) and Dr. Sangeeta Srivastava received *Fellow of the Uttar Pradesh Academy of Agricultural Sciences (UPAAS)* and Dr. S.N. Singh received *Dr. O.P. Gautam Vishisht Krishi Vaigyanik Puraskar-2015* of UPAAS from Honorable Governor of Uttar Pradesh, Shri Ram Naik Ji on March 4, 2016 at CSUA&T, Kanpur.

Dr. A.K. Sah received "*Excellence in Research Award 2016*" in International Seminar on Indigenous Technologies for Sustainable Agriculture and Better Tomorrow, January 09-10, 2016 held at CSIR-NBRI, Lucknow and organized by *Samagra Vikas Welfare Society & Amulya Sanchay Producer Company Limited*.

Dr. A.K. Sah received "*Excellence in Conference Management Award*" from NISSTA for organizing Annual Convention and Technical Expo-2016 at ICAR-IISR, Lucknow on April 29-30, 2016.

Drs. Deepak Rai and Rakesh Kumar Singh received "Best KVK Scientist Award-2015" of the Indian Society of

Extension Education, IARI, New Delhi.

Dr. S.N. Singh was conferred "*SAP Fellowship Award-2014*" by the Society of Agricultural Professionals, C.S. Azad University of Agriculture and Technology, Kanpur at IGFRI, Jhansi on February 20, 2016.

Dr. S.I. Anwar received "*Commendation Medal*" of Indian Society of Agricultural Engineers (ISAE) during ISAE Convention held at Bhubaneswar (Odisha) on Feb. 19-21, 2016.

Dr. A.K. Singh and Er. Sukhbir Singh received "*Best Poster Award*" (1st Prize) for the paper on 'Mechanization of sugarcane cultivation: IISR efforts' presented during 4th UP Agricultural Science Congress held at CSAUAT Kanpur on March 02-04, 2016.

Er. Sukhbir Singh and Dr. A.K. Singh received the First Prize for Oral Paper presentation entitled 'Cost effective and drudgery reducing technologies for sugarcane cultivation in India: a review' in International Seminar on Indigenous Technologies for Sustainable Agriculture and

Better Tomorrow held at CSIR- NBRI, Lucknow on January 09-10, 2016.

Mr. Brahm Prakash, Dr. A.K. Sharma and Mr. A.K. Sachan received "Best Paper Award" for their paper entitled "Prospects of jaggery exports from India" presented in the 4th Uttar Pradesh Agricultural Science Congress held at CSAU&T, Kanpur during March 2-4, 2016.

Mr. Mohd. Ashfaq, Brahm Prakash, A.K. Sachan and A.K. Sharma received "Best Paper Award" for their paper entitled "Problems and prospects of commercialization of technologies under National Agricultural Research System in India" presented at Fourth National Symposium on

Transforming Indian Agriculture towards Food and Nutritional Security held at ICAR-Indian Grassland and Fodder Research Institute, Jhansi on February 20-21, 2016.

Research article "Validation of management practices against mango leaf webber, *Orthega euradalis*, Walker in central plain of Uttar Pradesh" by Deepak Rai, Viveka Nand Singh and Veenika Singh received Best paper presentation award in Fourth National Symposium on Transforming Indian Agriculture towards Food and Nutritional Security organized by Society of Agricultural Professionals, CSAU&T, Kanpur at ICAR-IGFRI, Jhansi on February 20-21, 2016.

माननीय अतिथियों का भ्रमण



आदरणीय श्री राजनाथ सिंह जी
गृह मंत्री, भारत सरकार



आदरणीय श्री राम नाईक जी
मा. राज्यपाल, उ.प्र.



आदरणीय श्री राधा मोहन सिंह जी
कृषि एवं किसान कल्याण मंत्री,
भारत सरकार



आदरणीय डॉ. संजीव बालियान जी
कृषि एवं किसान कल्याण राज्य मंत्री,
भारत सरकार

राजभाषा प्रकोष्ठ

- हिंदी कार्यशाला का आयोजन 29 मार्च, 2016 तथा 28 जून, 2016 को सम्पन्न हुआ जिसमें कुल 90 प्रशिक्षणार्थियों को प्रशिक्षण दिया गया।
- नगर राजभाषा कार्यान्वयन समिति (कार्यालय-3) की वर्ष 2016 की प्रथम बैठक दिनांक 28 जून 2016 को भाकृअनुप-भारतीय गन्ना अनुसंधान संस्थान, लखनऊ में आयोजित की गई। इस बैठक की अध्यक्षता डा. ए.डी. पाठक ने किया।
- बैठक के प्रारम्भ में नराकास (कार्यालय-3) के सचिव डा. ए. के. साह ने सभी सदस्य कार्यालयों से आये कार्यालय प्रमुखों एवं अन्य सदस्यों के समक्ष संस्थान में राजभाषा के कार्यकलापों पर विस्तृत जानकारी प्रस्तुत की।
- इस दौरान सदस्य कार्यालयों को विभिन्न कार्यों हेतु पुरस्कृत भी किया गया।



UPCOMING EVENT

National Training on Sugarcane Production Technology - January 2017

S.No.	Topic	Date
1.	Improved cane varieties and planting methods for high yield of sugarcane.	January 17-18, 2017
2.	Integrated nutrient and weed management in sugarcane.	January 19-20, 2017
3.	Inter cropping options in sugarcane for enhancing system productivity and profitability.	January 23-24, 2017
4.	Integrated pests and disease management in sugarcane.	January 27-28, 2017
5.	Mechanization and post harvest management in sugarcane	January 30-31, 2017

Eligibility

Official from KVKs, sugar mills, government organizations and input manufacturers related to sugarcane and agriculture.

Nomination

The nomination for one to three personnel for each training should reach to the Course Director in 10-15 days advance of training dates. The IISR will provide boarding/lodging facilities and training material to the participants without charging any fee. For detail visit www.iisr.nic.in

6th International IAPSIT Sugar Conference – 2017

Conference Date: 18th -23rd June, 2017

Conference Theme: The Value of Partnerships & Collaboration

The Venue - The Gateway Hotel Umhlanga Rocks, Durban, KwaZulu-Natal, South Africa. Umhlanga Rocks is north of Durban and is on the coast. The hotel is within the Gateway shopping centre.

Accommodation - The Gateway Hotel and more options within walking distance of the conference hotel.

For detail visit www.iapsit2017.co.za



प्रकाशक – डॉ. ए.डी. पाठक, निदेशक
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