

IISR Celebrates The Year of Excellence - 2012



Sugar is the second largest agro-based industry in India and contributes significantly to the socio-economic development of rural population. The sugar industry also plays a leading role in global sugar market being the world's second largest producer after Brazil, producing nearly 15 & 25 per cent of global sugar and sugarcane, respectively. In addition, to traditional white sugar, about 6-8 MT alternative sweeteners (Solid, liquid & powdered Jaggery and *Khandsari*) are also produced in the decentralized sectors. The sugar industry is a key driver of rural development, supporting India's economic growth and contributing over 1% to national GDP. The industry is inherently supporting over 6 million cane farmers and their families, along with workers and entrepreneurs of almost 600

mills and its integrated industries, apart from a host of wholesalers and distributors spread across the country. About 7.5% rural Indian population depends upon sugarcane for their livelihood and therefore its significance in socio-economic life of masses can not be ignored.

The Indian sugar industry is transforming gradually so it could leverage opportunities created by global shifts in sugar trade as well as the emergence of sugarcane as a source of renewable energy, through bio-ethanol & bio-electricity and host of value added products. The sugar sector today has tremendous transformational opportunities that would enable it not only to serve the domestic markets but also emerge as a significant carbon creditor and power producer and support an ethanol blending programme of E10 and beyond. Indian sugar industry is able to provide latest technical know-how in sugarcane production technologies, mechanization, sugar manufacturing, ethanol and power co-generation to the developing countries and help in accelerating their economic growth. These will make our sugarcane farming and sugar industry more sustainable and economically viable where productivity and recovery are below economic levels.

In India, especially in sub-tropics farmers grow sugarcane under diverse agro-climatic conditions, weather extremes, in flood and drought prone areas; despite these constraints our production efficiency is constantly improving. Currently, our cane yield and sugar recovery are 68 t/ha and 10.25% and with the help of improved varieties, better agri-management practices and technological innovations in processing we plan to take these figures to 100 t/ha and 11.00% by 2030. The Indian Institute of Sugarcane Research, since its inception in 1952 is actively engaged in sugarcane production-management-mechanization researches to improve the productivity and profitability of farmers in close association with the sugar industry. The new and improved varieties, better agri-production and management and farm implements developed by us will certainly help in achieving the target i.e. 600 MT cane, 36 MT sugar, 6.0 BL ethanol, and 5000 MW power by 2030.

IISR is celebrating its 60th anniversary as *The Year of Excellence*. A variety of activities will take place over the year showcasing its technologies and their impact on the growth of contemporary sugar industry. We hope that our new technologies and research innovations will make sugarcane cultivation more remunerative and profitable to the farmers.

Let's all bring out excellences in our life and profession to bless & benefit farming communities and nation.

S. Solomon

(S. Solomon)



SECTORIAL NEWS : SUGARCANE AND SUGAR INDUSTRY

International Conference

The 4th International Sugar Conference and Expo IS-2011 on “Balancing sugar and energy production in developing countries: sustainable technologies and marketing strategies” was jointly organised by International Association of Professionals in Sugar & Integrated Technologist (IAPSIT) & the Sugar Technologists Association of India (STAI) in New Delhi from November 21-25, 2011. More than 600 Delegates from 32 countries have participated. The conference

was inaugurated by Shri Sharad Pawar, Hon'ble Union Minister for Agriculture & Food Processing, Govt. of India.

Shri Sharad Pawar in his inaugural address appealed the researchers, planners and administrators to maximize sucrose recovery and minimise yield differences observed in sugarcane at different parts of the country. He also remarked that future demand of sugar can be only met by increasing the sugar and sugarcane productivity and to achieve these we have to reduce the cost of cultivation, develop and release high sugar varieties having high NUE & WUE.

Dr. Farooq Abdullaha, Hon'ble Union Minister for New and Renewable Energy, Govt. of India emphasized the importance of biofuel, cogeneration and issues related to blending of ethanol and fixing of bio-ethanol price to save huge foreign exchange in importing petrol. Dr. S. Solomon, Secretary, IAPSIT in his welcome note highlighted the importance of the conference in the present context where sugarcane is also being looked up apart from main source of sugar as potential bio-fuel energy of future. The President of IAPSIT & Chairman of IS-2011 Dr.

Yang Rui-Li, highlighted the role of International researchers and Industries in promoting the emerging cutting edge technologies in making sugar industry profitable and sustainable. Dr. G.S.C. Rao, President STAI & Chairman, Organizing Committee stressed upon the problems faced by Indian sugar industry viz., low yield of sugarcane, lack of high sucrose varieties, scarcity of labourers especially for harvesting, non-availability of cost effective machine like harvester etc.

The delegates discussed the issues related to thematic areas of



conference in detail and following recommendations emerged out of deliberations:

- Developing new opportunities to process sugarcane products so as to intensify the scope & utility of sugarcane crop.
- More emphasis needed on cane development at the millers initiative in the letter and spirit.
- Efforts be intensified for the well being of the small and marginal farmers in sugarcane growing countries.
 - Develop strategies to defend against in the eventualities of climate change.
 - Based on the Brazilian experience, sugarcane growing countries should ensure sugar mill managed planting and maturity wise harvesting with greater emphasis on ratoon management.
 - The sugarcane and integrated industries will need to upscale productivity above its current long-term average, and continue to play its role as a competitive supplier of food, fuel and fiber(3F).
 - There is an ardent need for molecular biotechnologists to work closely with conventional cane breeders for improving the efficiency of germplasm utilization, crossing hybridization and selection.
- Sugarcane clones must be tested at multiple sites to select useful varieties. “Trash” in one breeder’s hands may turn into “Gold” for others.
- There should be free exchange of germplasm across the globe in order to maximize the genetic base of modern sugarcane breeding.
 - More multi-institutional collaborations need to be promoted for the successful characterization of the complex sugarcane genome and for the development of useful DNA markers that are associated with traits of economical values, such as high sugar content, energy potential, drought or cold tolerance and pest resistance
 - Training /workshop on SSR fingerprinting and its utility on sugarcane breeding need to be conducted frequently.

Group Meeting of AICRP on Sugarcane

The Group Meeting of AICRP on Sugarcane was held from October 17-19, 2011 at the OUAT, Bhubaneswar. The Opening Session was held under the Chairmanship of Prof. D. P. Ray, Hon'ble Vice-Chancellor, OUAT. Sri R.L. Jamuda, Principal Secretary (Agriculture), Government of Orissa was the Chief Guest. Dr. N. Gopalakrishnan, ADG (CC), ICAR, Dr. R.L. Yadav, Director, IISR, Lucknow, Dr. N. Vijayan Nair, Director, SBI, Coimbatore and Dr. S. S. Nanda, Dean of Research & Director, Extension Education, OUAT, Bhubaneswar graced the occasion. About 150 delegates from AICRP centres, officials from sugar industry and state agriculture department were present. Dr. O.K. Sinha, Project Coordinator (Sugarcane) presented the Coordinator's Report for the year 2010-11. Shri R. L. Jamuda stressed upon collective effort by OUAT and the State Department of Agriculture for production and distribution of quality planting material of sugarcane through three-tier seed production system. The production capacity of the existing tissue culture laboratories in the private, public sector undertakings and agricultural university should be fully explored to produce disease-free seed material of new varieties so that the area could be quickly occupied with high yielding and high sucrose varieties.

Dr. N. Gopalakrishnan, ADG (CC), ICAR highlighted the initiatives of ICAR on sugarcane research. He stressed upon developing low cost technology for waterlogging and salinity tolerance as well as mitigating effects of climate change on cane productivity. He laid emphasis on efficient use of water and mechanizing cane cultivation to reduce the cost of cultivation in order to address the problems of global competition. Dr. R. L. Yadav highlighted the new technology like cane node technology for breaking yield barrier in sugarcane. Dr. N. Vijayan Nair, Director, SBI, Coimbatore mentioned that the decline in soil productivity, alteration in physico-chemical and biological properties of soil and adverse effects of climate change are the major bottlenecks in increasing cane productivity.

Prof. D.P. Ray in his presidential remarks called for the

adoption of new production technologies like Sustainable Sugarcane Initiatives (SSI) and tissue culture to enhance the cane production in the State. He expressed his happiness over the release of two new varieties of sugarcane, *Sabita* and *Neelamadhab* developed by SRS, Nayagarh (OUAT).

Indo-Brazil Workshop on Bio-energy

Under the aegis of Department of Science & Technology, Govt. of India, Indian Institute of Sugarcane Research, Lucknow, Central Salt & Marine Chemicals Research Institute, Bhavnagar and the Brazilian Academy of Sciences, a workshop on Bio-energy was organized at Bhavnagar on August 1-2, 2011. The group recommended the exchange of experts and projects on germplasm and bioenergy under *Global Sustainable Bio-energy Project* for fostering the International Cooperation between India and Brazil.

Addressal of Sugar mill Problems: Low Sugar recovery in western Uttar Pradesh

The sugar recovery in Uttar Pradesh during 2011-12 is showing a decline over the corresponding period of last year. In general, this year sugar mills of eastern U.P. are performing better in sugar recovery compared to western U.P., where a drop of around 0.5 units in recovery is noticed. A team of IISR scientists surveyed the cane growing areas of western U.P. and it was observed that in general the crop is good and there is no outbreak of any major pests and diseases. A look in the growing condition reflected that this year the region has received adequate rains and due to late western disturbances the relative humidity (RH) has increased substantially from an average figures of 50-60 in the normal seasons to more than 80 during crop maturation. It is known that high RH in the same temperature regime favours cane growth and hinders maturity. This unusual high RH in this region favoured the growth and the crop is still much greener indicating the late growth. Thus, the cane maturity is delayed in this region and in turn it impacted the recovery performance of sugar mills. In such conditions of crop growth, chemical ripeners may be gainfully utilized to induce maturity of cane and improve recovery performance of the mills.

IISR - IN THE SERVICE OF SUGARCANE FARMERS AND SUGAR INDUSTRY

Since its establishment in 1952, the Indian Institute of sugarcane Research has been working towards the upliftment of cane agriculture in India with its well defined Vision and Mission.

Vision

To develop an efficient, globally competitive and vibrant sugarcane agriculture.

Mission

Enhancement of sugarcane production, productivity, profitability and sustainability to meet future sugar and energy requirement of India.

New and emerging technologies from IISR

- Application of fresh sulphitation press mud cake (SPMC) @ 20 t/ha or fresh SPMC + 25 kg ZnSO₄/ha has been found to be most effective for improving bud sprouting and cane yield in winter initiated ratoon.
- Sub-soiling as well as cross sub-soiling at 1.0 m was found effective in enhancing cane yield and sustaining soil health.
- For management of whitefly (*Aleurolobus barodensis*) in sugarcane agro-ecosystem, removal of lower leaves followed by foliar application of *Imidacloprid* (0.005%) + 2% urea proved effective

- Three early genotypes viz., CoLk 11201, CoLk 11202 and CoLk 11203 and three midlate genotypes viz., CoLk 11204, CoLk 11205 and CoLk 11206 included in multi locations testing in north western zone under AICRP (S).
- Two genetic stocks viz., LG 05609 and LG 05610 tolerant to top borer sent to National Hybridization Garden, SBI, Coimbatore.
- Paired row planting (120-30 cm) with the irrigation applied in furrows parallel to one row was identified as highest water use efficient method of planting with IWUE of 4016 Kg cane/ha/cm against 1140 Kg cane/ha/cm under flooding.
- Application of sulphitation press mud cake (SPMC) with *Gluconacetobacter* recorded the highest cane yield (57.40 t/ha) of 7th ratoon followed by sole SPMC (54.80 t/ha)

and FYM + *Gluconacetobacter* (57.30 t/ha) against control (18.7 t/ha). The highest value of soil microbial biomass carbon (SMB-C) of 234.70 mg CO₂-C/Kg soil/day was recorded in SPMC + *Gluconacetobacter* applied plots against initial value of 47.60 mg CO₂-C/Kg soil/day.

- Post harvest loss in CCS% after 10 days could be reduced by 1.0 unit by spraying electrolyzed water on harvested cane followed by trash cover.
- Primers for SPS & SAI genes designed; qRT-PCR & Real-Time PCR analyses revealed differential expression of these genes in low and high sucrose accumulating varieties of sugarcane.
- An efficient and new functional marker 'Conserved intron scanning primer for genotyping in sugarcane' was developed.

INSTITUTE HIGHLIGHTS

Foreign Collaborations : Ethiopian delegates visited IISR

A five member delegation comprising Prof. Abraham Haileamlak, Dean of College of Public Health, Jimma University, Ethiopia along with other delegation members facilitated by Mr. Raghubir Singh, International Project Consultant, D.K.Y. Sales Pvt. Ltd. visited the Institute on August 24, 2011. During visit the team explored the possibility



of future collaboration with IISR for knowledge transfer in various areas like tissue culture, bud chip technique, cane node technology etc.

Visit of Indonesian delegates

An Indonesian delegation comprising Mr. Gunawan Budiarto, Mr. Budiarto, Mr. Alfarina Kardiana Sari, Ms. Nanik Setyaningsih and Ms. Nining Hermawati from PT. Perkebunan Nusantara (Persero) along with Dr. R. B. Singh, Advisor, Sugar Mills, the Haryana State Co-operative, Supply and Marketing Federation Ltd. (Hafed) and Dr. S. K. Taneja visited IISR on September 26, 2011. In an interactive session with IISR scientists, visiting delegates discussed about emerging issues in sugarcane production and need for future collaboration in the areas of mutual interests. The delegation



also expressed their desire to receive training in tissue culture technique at IISR.

Institute Research Council (IRC) Meeting

The Institute Research Council meeting was held on August 16-19, 2011 under the Chairmanship of Director. In this meeting, all the scientists and technical officers of the institute participated. The results of 54 on-going Institute projects for the year 2010-11 were reviewed and technical programme for the year 2011-12 were finalized.



Research/Academic Achievements: At a glance

PARTICULAR	NUMBER
Patent filed	1
Projects	
a. In-house projects	38
b. Externally funded & Contractual projects	5
c. Concept Note submitted for external funding	10
d. Collaborative/Network Projects	on-going - 4 Submitted - 4
Publications	
a. Research Papers	National - 29 International - 16
b. Bulletin	1
c. Book & book chapters	3
d. Popular articles	17
e. Folders	9
f. Papers presented in seminar/symposia	74
Documentary Films	2

IISR - Industry Interface: Meeting with STAI

To address the problem of low sugar recovery in UP an interaction meeting between a top level sugar industry official Dr. G. S. C. Rao, President, Suagr Technologists' Association of India & CEO, Simbhaoli Sugars Limited and Sugarcane Scientists was held at IISR, Lucknow. Dr. Rao appealed the scientists for concerted effort to check the decline in sugar recovery in UP and highlighted the technological developments in the Indian sugar industry. He emphasized the need of collaborative efforts between industry and scientists to address the problems like low sugarcane & sugar yield,



increasing cane cultivation cost, development of cane harvester, cellulosic ethanol and declining factor productivity. Dr. S. Solomon, Director, IISR reminded the commitment of the institute towards well-being of sugar industry and sugarcane farmers. He highlighted the technologies developed by IISR and emphasized the need for large scale adoption of IISR technologies to enhance the yield of sugarcane and sugar.

QRT Meetings

- QRT meeting of KVK, IISR, Lucknow was held on September 09, 2011 under the chairmanship of Dr. Kirti Singh, Ex. Chairman, ASRB, New Delhi. Dr. R.K. Singh, Programme Coordinator, KVK, IISR presented progress report for the period 2005-06 to 2010-11 and elaborated the on-going activities of KVK.



- QRT of PHT visited the institute during December 22-23, 2011 under the Chairmanship of Dr. R. P. Kachru, Ex. ADG (Process Engg.). Progress of work during last five years at different centres viz., IISR, Lucknow; NDUAT, Faizabad; BAU, Ranchi and AMU, Aligarh was reviewed.



- QRT of FIM visited the institute during December 26-29, 2011 to review the work of FIM scheme. Meeting was held under the Chairmanship of Dr. A. G. Powar, Dean and Director Research, MPKV, Dapoli in which progress of need of different centres viz. IISR, Lucknow; NDUAT, Faizabad; JNKVV, Jabalpur and SHIAT&S, Allahabad was reviewed.



Hindi Fortnight Celebrations

To encourage the use of Hindi in the official work, Hindi Fortnight was organized during September 14-30, 2011. During celebration a *Hasya Vyang Kavi Sammelan* and lectures were organized apart from number of other competitions. The valedictory function was organized on September 30, 2011 in which Dr. Jitendra Nath Pandey, Ex. Head, Department of Hindi, University of Lucknow was the Chief Guest. Dr. O.K. Sinha, Officiating Director presented the prizes to the winners of different competitions.

Sugarcane Information System (SIS): Review Meeting

An interactive meeting of officials from Cane Commissioner, Govt. of U.P., and Sugar Mills was held at IISR under the chairmanship of Dr. S. Solomon, Director, IISR to have expertise input from Institute's scientists on Sugarcane



Information System (SIS) developed by Sugarcane Department, UP. Mr. Rakesh Kumar Pandey, Joint Cane Commissioner, Govt. of U.P., coordinated the meeting on behalf of Sugar Industry and U.P. Cane Department. The SIS has been developed to provide timely and reliable information to sugarcane farmers related to sugarcane purchase by sugar mills. This innovative IT tool has been benefiting 29 lakh sugarcane growers and 116 sugar mills of the state. The SIS has been launched by 116 sugar mills and 15 crore SMSs and 8 lakh IVRS hits have been made during last year.

SIS is an integrated approach of various communication system viz., website, IVRS, HHC and SMS technologies to provide updated information on supply ticket, weighing, money transfer, *satta* etc. The IISR Scientists appreciated the efforts of the Cane Department for developing SIS which has won a Gold Medal at the National Award for e-Governance.

TRANSFER OF TECHNOLOGY

Training of Cane Development personnel

A 21 days training on *Sugarcane Management and Development* for cane development personnel of sugar mills was organized from July 1-21, 2011. A Total of 32 cane managers/officers from U.P, Bihar, Karnataka, Andhra Pradesh and Haryana participated in this training. The major objective of this training was to accelerate large-scale adoption of sugarcane technologies in sugar mill zone areas by grooming & developing cane managers/officers of sugar mills to become "torch-bearer" of IISR technologies.



technologies during training and visit programmes conducted at IISR and sponsored by sugar mills, development departments, ATMA and other agencies.

Visit Organised

A total of 301 graduate and post graduate level students from different academic institutions of the country visited IISR laboratories and Experimental farm during July-December 2011. A total of 54 cane development personnel/scientists/teachers visited IISR during July-December 2011 for interaction with the IISR scientists to understand recent advances in sugarcane research.

KVK Round-up

Five groups comprising a total of 130 farmers from different states visited KVK, IISR, under schemes sponsored by ATMA, NHM, RKVY and SC/ST farmers group Inter-State Education tour etc. Visiting farmers were provided with latest know-how in sugarcane, horticulture, animal husbandry and general agriculture. KVK, IISR organized eight numbers of 2 days training sponsored by National Horticulture Mission, Govt. of India from December 12-20, 2011 in which 200 farmers from eight blocks of Lucknow district participated. As many as 263 FLDs on hybrid sweet sorghum, sesamum, arhar, berseem, pea, mustard, potato, wheat and sugarbeet were laid out on farmers' fields. A total of 34 on & off campus vocational trainings in which 683 farmers, farm women & rural youth were trained in diverse areas of agriculture and allied enterprises.

Farmers' Training

Five days Farmers' Training on "*Ganne Ki Unnat Krishi Taknik*" sponsored by ATMA, Gopalganj (Bihar) was organized from November 15-19, 2011. In this training 30 farmers from Gopalganj district of Bihar participated. Knowledge in various aspects of sugarcane cultivation like improved varieties, planting methods, nutrient management, water management, integrated diseases and pests management, weed management, mechanization of sugarcane cultivation, jaggery making etc. were provided through theoretical and practical sessions.

Farmers' training on *Tractors and machinery* was organized in collaboration with M/S Eicher Tractors on November 11, 2011 in which 43 farmers participated.

A total of 474 farmers from different states of the country were imparted know-how in innovative sugarcane production

Success Story

Sri Rajesh Kumar, a farmer from Sidhawaliya, Gopalganj (Bihar) increased the cane cultivation income from Rs. 50,000 to Rs.1,50,000 per hectare by adopting Ring-pit method of cane planting. Sri Rajesh learned the technique of Ring-pit method during training at IISR. While returning to his native place, he has grown sugarcane with this technique at his field and harvested over 175 t/ha sugarcane in comparison to 50-60 t/ha with conventional method. In recognition of his achievement one of Birla group sugar mills operating locally gifted him a Disc harrow along with a letter of appreciation. Sri Rajesh is also growing intercrops (wheat & lentil) on raised beds with the help of RBS machine as demonstrated by IISR, thus reaping maximum benefits from sugarcane cultivation. The additional income he receives from cane cultivation invest in other enterprises like dairying, fisheries etc. Using our technologies, he is gradually becoming more prosperous and serving as harbinger of IISR sugarcane technologies in local farming community.

Students Trained

A total of 32 Graduate and Post Graduate students from different Universities and Institutes were trained under 45 and 90 days lab training at IISR during the period April 2011 to December 2012 in different disciplines of applied science.

Awards and Honour

- Dr. S. Solomon, Director, IISR, Lucknow was nominated as the Member (Expert Scientist) by the Department of Food & Public Distribution, Ministry of Food & Civil Supplies, Govt. of India.
- KVK, IISR, Lucknow received 1st & 3rd prize for best Exhibition stall in *Kisan Mela* organized at KVK, Unnao on November 05, 2011 and at Sodic Land Kisan Mela, Lucknow on November 21, 2011, respectively.
- Dr. Sangeeta Srivastava was awarded *Women Botanist Medal 2011* in the 34th Indian Botanical Society Conference held at Lucknow.
- Drs. Amresh Chandra and A. K. Shrivastava acted as Rapporteur in Technical session-II: Breeding & Biotechnology and Technical session-IV: Management, Marketing and Sustainability issues during 4th International Conference IS-2011 held at New Delhi from November 21-25, 2011.
- Dr. Chandra Gupta, bagged 3rd prize for poster paper presentation in 44th Annual Convention of Indian Society of Agricultural Chemists and National Symposium held at College of Agriculture, GBPUA&T, Pantnagar during November 25-26, 2011.
- Dr. Rajendra Gupta was awarded Ph.D. degree by GBTU, Lucknow on December 28, 2011.

Training attended

Dr. M. Swapna attended training on "Computational tools for genome resources data analysis in fisheries domain" under NABG initiative by NAIP from October 12-22, 2011.

Participation in Seminar/Symposia/Workshops/Meeting

- Dr. A.K. Sharma participated in Sugarcane fair and remunerative price fixation meeting chaired by the Chairman, CACP held at New Delhi on July 21, 2011.
- Dr. P.R. Singh and A.K. Singh attended Coordination Committee Meeting of AICRP on FIM held at IASRI, New Delhi on July 22-24, 2011.
- Dr. A. Chandra attended IMC meeting at IGFRI, Jhansi on 26th July, 2011.
- Drs. A. Chandra and A.K. Shrivastava participated in Brain Storming

Meeting on "Prioritization of Plant Physiology and Biochemistry Research for XIIth Five Year Plan period" at IARI, New Delhi on August 5-6, 2011.

- Dr. T.K. Srivastava delivered a talk on "Diversification of sugarcane based cropping system with rapeseed-mustard" at AAU Regional Station, Shillongani, Nowgong (Assam) on August 7, 2011.
 - Dr. Hema Pandey participated in National Consultation on Gender perspective held at New Delhi on August 8-9, 2011.
 - Dr. S.N. Singh participated in Stakeholders meeting on "The utilization of solid organic waste (Agro-industrial)" at New Delhi on August 12-13, 2011.
 - Dr. Radha Jain attended National Consultation on "Sustainable Sugarcane Initiative" held at TNAU, Coimbatore on August 24-25, 2011.
 - Drs. S.K. Duttamajumder and S.N. Sushil attended National Meeting on "Agricultural Entomology for the 21st Century : The Way Forward" held at NBAII, Bangalore on August 24-25, 2011.
 - Dr. A. Chandra delivered a key note address on "Application of molecular marker in improvement of crops" in the National Seminar held at IGFRI, Jhansi on September 10-11, 2011.
 - Dr. Arun K. Srivastava attended QRT review meeting of NPCC programme held at BAU, Ranchi on July 29-30, 2011 and National Stakeholders Consultation on Climate Change held at CRIDA, Hyderabad on September 19-20, 2011.
 - Dr. A.K. Sharma and Sh. Brahm Prakash participated in state level sugarcane price fixation committee meeting under the chairmanship of Cane Commissioner, UP on September 30, 2011.
 - Dr. A.K. Sharma, Sh. Brahm Prakash attended State level meeting on fixing sugarcane prices under the chairmanship of the Chief Secretary, Govt. of U.P. on October 18, 2011.
 - Drs. R.L. Yadav, O.K. Sinha, T.K. Srivastava, A.D. Pathak, J. Singh, Rajesh Kumar, S.K. Shukla, G.M. Tripathi, Ramji Lal, S.N. Singh, A.K. Singh, P.K. Singh, M.R. Singh, Sanjeev Kumar, Ishwar Singh, Chandra Gupta, J.K.S. Gautam and Sh. Adil Zubair participated in Group Meeting of AICRP on Sugarcane held at OUAT, Bhubaneswar during October 17-19, 2011.
 - Drs. R.L. Yadav and S.K. Shukla participated in Seminar on "Balanced Fertilization and Importance of K in Increasing Productivity" held at CSAUA&T, Kanpur on November 4, 2011.
 - Dr. P.K. Singh attended Foundation Day and Annual Review Meeting of PPV&FR Authority New Delhi during November 11-12, 2011.
 - Dr. S.K. Shukla participated in National Seminar on New Vistas of R & D in Agri. & Allied Sectors held at NDUA&T, Faizabad.
 - Drs. S. Solomon, A. Chandra, A.K. Shrivastava, Raman Kapur, Sangeeta Srivastava and Radha Jain participated in the 4th IAPSIT International Conference IS-2011 held at New Delhi.
 - Mr. Brahm Prakash attended 25th Annual Conference of the Indian Society of Agricultural Marketing held at NAARM, Hyderabad on November 22-24, 2011.
 - IISR participated in the 2nd International Exhibition and Conference on Agricultural Machinery and Equipment during December 08-10, 2011 at IARI, New Delhi.
- ## New Joining
- Sh. Deepak Rai, SMS (Plant Protection) joined KVK, IISR on transfer from VPKAS, Almora on 23.08.2011.
 - Dr. A.K. Singh, Pr.Scientist (Plant Pathology) joined on transfer from CISH, Lucknow on 12.09.2011.
 - Ms. Visha Kumari V., Scientist (Agronomy) joined on 23.12.2011.
 - Ms. Nithya K., Scientist (Plant Pathology) joined on 23.12.2011.

PERSONALIA

IISR got new leadership

Dr. S. Solomon, an eminent Biochemist assumed the post of Director on 22nd December, 2011. As Scientist he earned name and fame at national and international levels owing to his significant contributions in the field of sugarcane research with special reference to post-harvest management, improving sucrose content in the cane & recovery in the mills and also for the use of Plant Growth Regulators (PGRs) in sugarcane agriculture. As many as 5 International and several National awards have been conferred on Dr. Solomon. Associated with many national and international scientific agencies in different capacities, Dr. Solomon has so far organized more than 10 national and international conferences/seminars with grand success. He has authored 10 books on sugarcane and has to his credit more than 130 research papers, reviews, technical bulletins etc.

Consultancy Services offered by IISR to Sugar Industry

For the benefit of Sugar Industry, IISR extends consultancy & contractual services in the following areas:

1. Scientific Cane Development in Sugar Mills
2. Mechanization of Sugarcane Cultivation
3. Integrated Sugarcane Ratoon Management
4. Intercropping with Sugarcane
5. Integrated Management of Insect Pests and Diseases of Sugarcane and Sugarbeet
6. Scientific Varietal Planning in Mill Area
7. Management of Weeds
8. Water Management (Micro-Irrigation, Fertigation and Moisture Conservation) in Sugarcane
9. Sugarbeet Production Technology including Tropical Sugarbeet (TSB)
10. Seed Treatment Unit and Healthy Seed Production Technology
11. Establishment of Tissue Culture Laboratory/ Tissue culture techniques to raise tissue culture plants
12. Establishment of Bio-Control Laboratory
13. Establishment of Cane Quality Laboratory (Juice and Sugar Analysis)
14. Gur/Jaggery Production, Value addition, Handling and Storage
15. Post-Harvest Management of Sugar Losses in Field and Milling tandem: Judicious use of biocides
16. Improvement in Sucrose Content through Artificial Ripening Technology
17. Use of Plant Growth Regulators in Sugarcane Agriculture.

International Training on Sugarcane Production Management

(3-Weeks Intensive Training Module)

Organizers : Indian Institute of Sugarcane Research, Lucknow, India
In Association with: ASTI, IAPSIT, SSRP and STAI

Duration : 21 days (15 October to 04 November, 2012)

Last date for nomination : 31 July, 2012

Fee Remittance : 31 August, 2012

Training Fee : US\$ 2500 (₹ 1.25 lakh)

Fee covers all expenses including accommodation, food, registration, tours and excursion for Foreign & Indian delegates.

Main attractions:

- Lectures covering fundamentals and recent advancements in sugarcane production technology
- Hands-on training on farm and laboratory techniques
- Visits to modern sugar processing units
- Educational tour to National Sugar Institute, Kanpur/UPCSR, Shahjahanpur/SBI, Coimbatore and Taj City Agra

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National Training on Sugarcane Management & Development

(July 1-21, 2012)

With the objective to groom and train the cane development personnel of sugar mills in latest technology of sugarcane cultivation & development, IISR will organize a 21 days National Training from July 1-21, 2012.

Training fee : Rs. 10,000 per participant

Lodging and Boarding fee : Rs. 350 (Non-AC) & Rs. 450 (AC) per day per participant (on twin sharing basis)

Nomination : The nomination for one or two cane development staff from a sugar mill should reach to the Director, IISR, Lucknow by June 10, alongwith requisite training fee (i.e. Rs. 10,000). Since the seats are limited, the officers will be selected on first-come, first-served basis.

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