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### Director's Column

#### *Boom and bust cycle in Indian Sugar Sector*

A 'boom and bust cycle' is discernible in Indian sugar industry owing to periodic rise and fall in domestic sugarcane production mainly governed by acreage which in turn gets affected due to factors like State Advised Price of sugarcane, payment by the sugar mills and arrear balance.

Sugar is a highly controlled commodity in India regulated through "The Sugarcane Act 1934", The Sugarcane (control) order, 1966", The Sugar (control) order, 1966" and The Sugar (price control) order, 1979". These were put in place to eliminate impediments in sugar production, to ensure a fair deal to the cane growers and sugar consumers with provisions for reasonable sharing of profits between growers and processors. Unfortunately the objectives were achieved partially and squabbles between the mill owners and the cane growers emerge at regular intervals, sometimes leading to farmers' agitation amidst delayed crushing and non payment of cane dues. This situation therefore warrants paradigm shift in Indian sugar sector to achieve integrated development from 'Beej to Bazar'. Sugarcane comes under purview of CACP. However, it is not directly traded for general consumption and before reaching the market for common man's consumption, it involves industrial processing rendering it out of CACP purview. This duality of price fixation is crippling both cane growers as well as sugar consumers as witnessed during 2009-10 crushing season. To harmonize sugarcane production and utilization at one hand and to minimize farmers' woes on the other it is utmost necessary that the 'boom and bust cycle' must be ironed out. At macro scale such strategies must address following issues:

- Realistic view of CACP considering the cost of cane cultivation, receipts by sugar mills on by products, while fixing the cane price.
- Strictly regulated payment schedule with a scope of 50% advance payment to growers.
- Sugar mills to be made instrumental for effective coverage of sugarcane under crop insurance scheme.
- The levy system of sugar procurement should be relooked and government may procure sugar from the open market.

The dual price fixation mechanism i.e. MSP by central government and SAP by the state governments invites wrath from the farmers, and often fail to satisfy their aspirations. As a consequence, common man suffers due to soaring sugar prices in the open market and sugar mills on the other hand often dole out a higher cane procurement price than SAP to run the mills economically. As evident a realistic MSP/SAP would have served the purpose amicably. Situation therefore warrants a radical change in policy and procedure of price fixation of sugarcane and sugar. Government may intervene to fix maximum sugar price, above which mills should not sell sugar and the minimum support price of cane for effecting purchase of cane. Then, at given price of sugar, let sugar mills negotiate with farmers for cane price and, at this negotiated cane price sugar mills should sign a formal contract with cane growers with assurance of support in case of crop failure. At the same time, sugarcane being a highly perishable commodity like tea requiring immediate processing after harvest, it may be taken out of the purview of CACP and be treated independently like tea, and an apex body "The National Sugarcane Board" may be formed to ease out the present complexities. Technocrats from the field of sugarcane, sugar, industry and marketing should manage this apex body. The board must be entrusted to protect the mutual interest of cane growers and millers with the provision of autonomy in dealing with ground reality of cane cultivation, soaring input prices, farmers' aspirations and millers' expectations.

## SUGARCANE SECTOR

### Workshop of AICRP on Sugarcane

The 28th Biennial Workshop of AICRP on Sugarcane was organized at the Navsari Agricultural University (NAU), Navsari from 27-29 October, 2010. Dr. A.R. Pathak, Vice-Chancellor, N.A.U., Navsari inaugurated the opening session and Dr. K.C. Jain, ADG (CC), ICAR, New Delhi chaired the session. Dr. H.C. Pathak, Director of Research & Dean, P.G. Studies, N.A.U., Navsari welcomed the delegates and presented the scenario of sugarcane production in Gujarat State. The annual progress of the Coordinated Project and achievements were presented by Dr. O.K. Sinha, Project Coordinator (Sugarcane). Dr. N. Vijayan Nair, Director, SBI, Coimbatore, in his Introductory Remarks, stated that fluctuation in sugarcane production in the country is cyclic in nature and production is likely to increase in the current year. He emphasized to increase soil productivity for higher cane productivity. Prof. J.B. Patel, Chairman, National Federation of Cooperative Sugar Factories Ltd., New Delhi draws attention of the delegates for diversified uses of sugarcane. He urged for management of soil health, development of high yielding varieties, mechanized sugarcane cultivation, etc. for higher cane productivity. Dr. A.R. Pathak, the Chief Guest, highlighted the marked improvement in cane productivity in Gujarat due to effective transfer of improved technologies to the farmers. He emphasized on developing cane varieties resistant to biotic and a-biotic stresses through molecular biological work, increasing soil carbon content, more use of bio-fertilizers and seed multiplication through tissue culture. Dr. K.C. Jain, Chairman welcomed the progress made in Gujarat State for improving sugarcane productivity. He laid emphasis on efficient use of water and mechanizing cane cultivation. The session ended with vote of thanks by Dr. D.U. Patel, Unit Head (Sugarcane), N.A.U., Navsari.

### MoU with DSCL group of sugar industries

The technology of bio-control of diseases and insect-pests in sugarcane crop would be transferred by IISR, Lucknow to DSCL group of sugar industries in Hardoi and Lakhimpur Kheri districts of Uttar Pradesh. For this, a Memorandum of Understanding (MoU) has been signed between IISR and DSCL group of sugar industries. As per provision of agreement, IISR will help in establishing bio-control laboratories in sugar mill command areas and also supply basic culture of *Trichoderma* and *Trichogramma* for multiplication. IISR will also provide training to the staff of DSCL group of sugar industries on the aspect of bio-control and will deploy scientists to monitor the incidence or outbreak of diseases and insect-pests, if any, in standing cane crop as and when need arise.



### CWC applauded IISR effort

A team consisting Mr. Rajeev Kumar, Director and Mr. Sriram Deputy Director from Central Water Commission, Lucknow visited demonstration fields under FPARP along with IISR scientists and Sugar mill officials in command areas of Biswan Sugar mill, Biswan, Sitapur and applauded IISR efforts in saving irrigation water in sugarcane. The CWC officers were amused to see crop performance in the fields and interacting with farmers about benefit accrued. Farmers saved as much as 25-30% irrigation water by adopting water saving techniques like skip furrow method of irrigation and irrigation at critical growth stages as demonstrated by IISR scientists. The expected yield of cane in demonstration fields is about 130-160 t/ha as told by farmers.



## INSTITUTE'S/DIVISIONAL NEWS

### IRC Meeting

The Institute Research Council (IRC) meeting was held under the Chairmanship of Director, IISR from August 16-19, 2010. In the meeting 102 on-going research projects were reviewed. The Chairman emphasized to economize time and resources and urged the scientists to come out with the technologies for advance sugarcane farming in the country. In the meeting the projects achievements for the year 2009-2010 were discussed and technical programme for the year 2010-11 were finalized.

### QRT Meeting

The final QRT meeting of IISR and AICRP (S) for the period 2005-09 was held at the Institute from December 14-16, 2010 under the Chairmanship of Dr. N.N. Singh, Vice Chancellor, Birsa Agricultural University, Ranchi. Dr. O.P. Dubey, Ex-ADG (Plant Protection), ICAR, New Delhi, Dr. G.C. Srivastava, Ex- Head, Division of Plant Physiology, IARI, New Delhi, Prof. Narayan Rishi, Director, Institute of Virology, AMITY University, Noida, Dr. M.N. Premchandran, Head, Division of Crop Improvement, SBI, Coimbatore and Prof. P. Kumar, Former Prof. (Ag. Econ.) IARI, New Delhi as its Members and Dr. A.K. Shrivastava, Principal Scientist at this Institute as Member Secretary participated in the meeting. The QRT report was finalized after thorough discussions among members and interaction with scientists.



### Technological Achievements

- LG 05823 a mid-late maturing clone resistant to three races (*Cf*08, *Cf*09 and *Cf*11) of red rot has been accepted for multi – location testing under Uttar Pradesh State Zonal varietal trials.
- Ten sugarcane genetic stocks viz., LG 05464, LG 05470, LG 05480, LG 06601, LG 06602, LG 06603, LG 06604, LG 07951, LG 06952, LG 06953 for different economic traits were sent to SBI, Coimbatore for inclusion in National Hybridization Garden (NHG).
- 260 EST- SSR markers were designed and developed for red rot from 4000 unique organ-specific and 1069 red rot specific ESTs.
- The planting of cane setts dipped in zinc sulphate solution (50 ppm zinc) for 24 hours increased germination by 109%. However, germination can be achieved upto 75.9% by planting water soaked cane setts.
- The application of *Trichoderma harzianum* along with MHAT recorded maximum protection of canes against red root in cane variety CoLk 7701.
- The prototype of cane harvester developed and tested at IISR recorded average effective field capacity of 0.15 - 0.20 ha/hour with field efficiency of 50-60%. The equipment collect harvested cane at one side of the field and de-topping & de-trashing of cane is done separately. This equipment may be used for partial mechanization of harvesting operation in sugarcane.

### Infrastructure developed: On-line Exam Centre

The professional competence gets its honour as IISR selected one of the nodal centres by ASRB New Delhi for conducting online examination of ARS/NET. Institute has developed online examination hall in library building with 100 sitting capacity. Centre is equipped with state of the art local area network to serve as a back-bone to online examination system.



### Externally Funded Project

Ministry of Science & Technology, Deptt. of Biotechnology, Govt. of India, New Delhi granted a project on "Development of Plant growth promoting consortium for rice-wheat-sugarcane cropping system" to IISR for the period 2010-2013.

## TRANSFER OF TECHNOLOGY

### Feedback from farmers' fields

- To popularize sugarbeet cultivation, seed was given to farmers and demonstration at farmers' field was conducted to promote use of sugarbeet tops and roots as fodder for milch animals. As a result milk yield of animals owned by beneficiary farmers increased.
- FLDs on wheat showing by zero till machine conducted by KVK, IISR during last 4-5 years increased area under wheat shown by zero tillage method up to 1000 hectares in Lucknow district
- Five farmers in KVK adopted villages started producing potato seed using Seed Plot Technique (SPT) as demonstrated by KVK, IISR under FLD programme.
- The field outreach activities were conducted by KVK, IISR in adopted villages of Lucknow district for regular dowering of cattle and feeding of mineral mixture mixed with cattle feed. The farmer of adopted villages expressed their opinion to receive such services in future as the milk yield of animals increased.

### Survey and Surveillance for disease and pests

IISR Scientists surveyed cane growing areas in Central U.P. and Bihar and reported red rot in several areas of central U.P and Bihar. In Harinagar Sugar Mills, Bihar the major varieties affected with red rot were CoSe 95422 and CoJ 88. In Central U. P. incidence of red rot was noticed on CoLk 8102, CoS 8436 & CoS 8432. Amongst the insect pests, major incidence of internode borer and top borer was observed in the command areas of DSCL group of Sugar industry in Hardoi district. Major incidence of early shoot borer and white grub was also recorded in the command areas of Triveni Engg. and Industries Ltd., Deoband, Sagharanapur. The worst affected variety due to white grub damage was CoS 88230.

### KVK Round-up

Six Groups comprising a total of 143 farmers from different states visited KVK, IISR under schemes sponsored by ATMA, NHM, NFSM etc. During visits farmers provided with latest know-how in sugarcane, horticulture, animal husbandry and general agriculture. Theoretical and practical sessions were organized for knowledge enrichment of visiting farmers in diverse areas of agricultural production. Through "seeing is Believing" experience they were enlightened on the improved techniques of jaggery and khandsari processing, vermi-composting and sugarcane cultivation machines. A total of 201 FLDs on 45.0 ha areas were laid out on arhar, sesamum, vegetable pea, field pea, mustard, berseem, potato, wheat and sugarbeet during the reported period. The KVK organized as many as 26 On and Off campus vocational training in which 597 farmers, farm women & rural youths were trained in diverse areas of agriculture and allied enterprises.

A meeting was held at KVK, IISR on 16.12.2010 between the officials of State Agriculture Department and KVK. The strategies to increase productivity of rabi crops, potato seed production, banana, vegetable pea were discussed and mechanism to strengthen linkages between State Agriculture Department & KVK was also decided.

### Cane inspectors visited IISR Farm

A total of 110 cane inspectors from different districts of U.P. visited Sugarcane experimental farm at IISR under training programs conducted at *Ganna Kisan Sansthan*, Lucknow. During their visits cane inspectors were provided with know-how in improved sugarcane cultivation.



### Krishi Darshan team visited IISR

A team from *Krishi Darshan, Doordarshan*, New Delhi along with NABARD officers visited IISR on October 28, 2010. During visit they recorded a talk of Dr. A. K. Sah on "Scientific cane cultivation and techniques of water saving & higher yield in sugarcane" in hindi at IISR farm and talk was telecasted on November 8, 2010 in *Krishi Darshan* program of DD National Channel.

## HUMAN RESOURCE DEVELOPMENT

### Training received

Technical Officers Dr. Om Prakash, Dr. R.K. Singh and Sh. Ram Singh, participated in the 7th Advanced Level Training in 'Soil Testing, Plant Analysis and Water Quality Assessment' held at IARI, New Delhi during September 21-October 11, 2010.

Sh. S.K. Savital and Sh. Rajendra Singh, Technical Officers attended Training on 'Farm Machinery Repair, Maintenance, Operation and Fabrication Techniques' at Agricultural Machinery Research Centre, TNAU, Coimbatore during October 14-18, 2010.

Dr. G.K. Singh, Technical Officer attended Winter School on 'System-based Integrated Nutrient Management for Sustained Productivity and Soil Health' held at PDFSR, Modipuram, Meerut during October 1-21, 2010.

Drs. P.K. Bajpai and Mani Ram Verma attended training programme on 'Data Analysis using Statistical Analysis System' under the Consortia based research project "Strengthening Statistical Computing for NARS" held at IASRI, New Delhi on October 25-30, 2010.

Dr. Amaresh Chandra attended '15th Management Development Programmer in Agricultural Research (ICAR sponsored)' at NAARM, Hyderabad from December 2-7-2010.

Sh. S. S. Hasan attended training on 'Interactive meet on information and communication technology in ICAR' on November 3-4, 2010 at NASC complex, New Delhi.

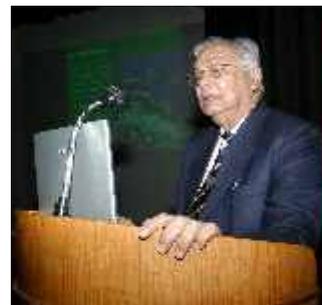
### Sensitization for healthy & happy life

A Seminar on 'Medicine and stress less life' was organised on 31.12.2010 at the institute. Dr. Vishwajeet Navik and Dr. Sheetal Malvi expert from 'Sanjeevni' Institute delivered their talk and enlightened the staff of IISR about different issues related to healthy life.

Dr. D.S. Rathore, ADG (Retd.) ICAR, New Delhi and Ex-VC, Himachal Pradesh Agril. University, Palampur (H.P.) delivered a talk on "Wisdom for happy life" on 6.08.2010 at IISR. He nicely and elaborately explained many small but valuable wisdom which can help a lot every human being to lead happy life with eternal joy.

### Lecture on 'Agro-biodiversity'

A lecture on "Agro-biodiversity and farmers' Right" delivered by Dr. N.N. Singh Vice Chancellor, Birsa Agricultural University, Ranchi on December 16, 2010. He sensitizes the scientists about rich heritage of agro-biodiversity in India and emerging importance of this particular area in sustaining higher agril. productivity to fulfill ever increasing demand of food grains and other agril. produce.



### Award / Honour

Dr. R. L. Yadav, Director, IISR awarded 'Padmavibhushan Dr. M. S. Swaminathan Award-2010' by *Krishi avam Gramin Vikas Samiti*, Lucknow for his outstanding contribution to Agronomy.

Dr. Amaresh Chandra awarded Fellow of the Range Management Society of India, Jhansi in Year 2010. He also received ICAR award for outstanding interdisciplinary team research in agriculture and allied sciences for the biennium 2007-08 in July, 2010.

Dr. Raman Kapur was invited by the National Federation of Cooperative Sugar Factories Ltd. to deliver a talk on 'Perspectives of sugarbeet cultivation in India' on September 5, 2010 in Pune. He was also invited by S. Nijalingappa Sugar Institute and SES Vanderhave to enlighten personnel of sugar factories in North Karnataka on October 15, 2010 at UAS, Dharwad.

Mr. G. K. Singh, Technical Officer was awarded Ph.D. (Agronomy) by Dr. Bhimrao Ambedkar University, Agra on his thesis "Potassium and nitrogen nutrition in sugarcane ratoon (*Sacharum* species hybrid) under various planting geometries in sub-tropical India".

**EVENT****Hindi Pakhwara celebrated**

To promote use of hindi in research and administrative office work "*Hindi Pakhwara*" was celebrated during 14-30 September, 2010 as per the guidelines of ICAR. During fortnight long celebration various competition and programmes in hindi like, hindi translation, hindi typing, *antyakshari*, essay, extempore speech, *kavya path*, hindi publications and maximum work done in hindi were organized for IISR staff and their children.

A *Hasya Kavi Sammelan* was organized on 21.09.2010. Renowned *hindi kavi* of different fervor and colors, Sri Ramkishore Tripathi, Sri Ashutosh Srivastava, Sri Rakesh Bajpai, Sri Bholanath Adhir, Smt. Kavita Tiwari, Dr. R.P.Singh and Sri Farukh Saral made the audience delighted and cheerful with their humorous recitation. Some of their recitation depicting degrading social values touched the audience close to heart.



A thought provoking lecture on "*Hindi Shabda: rachna avam vartani va Jankavi Tulsi Ka Samsamvik mahatva*" was delivered by Dr. Jitendra Nath Panday, Ex-Head, Department of Hindi, Lucknow University, Lucknow on 30 September, 2010 at the occasion of closing ceremony of Hindi pakhwara celebration. At this occasion the winners of different competitions were honored with the prizes.

**PARTICIPATION IN SEMINAR/SYMPOSIA/WORKSHOPS**

Dr. Jaswant Singh participated in 'Entrepreneurship Development Workshop/Camp and a Business Opportunity Workshop' on July 8-9, 2010 at IVRI, Izatnagar.

Dr. A.D. Pathak participated in a Seminar on 'Sugarbeet and Fodder beet introduction in India' on July 15, 2010 held at UAS, Dharwad.

Dr. Sanjeev Kumar attended Review Meeting of the 'Mega Seed Project' on July 19-20, 2010 at NASC Complex, New Delhi.

Dr. Ashok Kumar Srivastava attended QRT meeting on July 23-24, 2010 held at RAU, Pusa, Samastipur (Bihar).

Drs. Raman Kapur and Sangeeta Srivastava attended Interactive session on 'Consultation on Biotechnology Research in ICAR' held on July 26-27, 2010 at NASC Complex, New Delhi.

Dr. J. Singh attended Workshop to review the 'Conduct of DUS test for the period 2007-10' on August 11-12, 2010 held at NAARM, Hyderabad.

Dr. R.S.Verma attended National Conference on 'Integrated Weed Management in the Era of Climate Change' on August 21-22, 2010 held at NASC Complex, New Delhi.

Drs. O.K. Sinha and Ashok Kumar Srivastava attended QRT meeting on August 24-25, 2010 held at SBI, Coimbatore.

Dr. S.K. Duttamajumder attended the Workshop on 'Approved Races for Pesticides in Agriculture' on August 30, 2010 held at NASC Complex, New Delhi.

Dr. Jaswant Singh participated in a meeting on AICRP (PHT) at Engineering SMD, ICAR on September 18, 2010. He also participated in a meeting of all sectoral PIs of AICRP on PHT during September 24-25, 2010 at CIPHET, Ludhiana.

Drs. Arun K. Srivastava and Ashok Kumar Srivastava participated in the Annual Workshop of the NPCC on September 21-23, 2010 held at AAU, Anand.

Dr. Ram Dhiraj Singh attended National Seminar on 'Engineering Interventions to Enhance Income of Small and Marginal Farmers' on September 29-30, 2010 held at Institution of Engineers, New Delhi.

Drs. O.K. Sinha, Raman Kapur, S.K. Duttamajumder, R.S.Verma and Ashok Kumar Srivastava participated in the QRT meeting of AICRP (Sugarcane) on September 30-October 1, 2010 held at PAU, Ludhiana.

Dr. R.L. Yadav and Dr. O.K. Sinha, attended ICAR Regional Committee Meeting on October 7-9, 2010 held at BAU, Ranchi.

Dr. R.K. Singh, I/c KVK attended the Interface Meeting of KVKs of Region II on October 8-9, 2010 held at BAU, Ranchi.

Drs. O.K. Sinha, R.S. Verma, R.S. Chauhan, Om Prakash, G. M. Tripathi,, A. D. Pathak, S. N. Singh and Technical Officers J.K.S. Gautam and Sh. Adil Zubair, attended 28th Biennial Workshop of AICRP (Sugarcane) held at NAU, Navsari during October 27-29, 2010.

Drs. Jaswant Singh and R.D. Singh participated in 28th Biennial Workshop on AICRP on Post Harvest Technology held at CIAE, Bhopal during October 28-31, 2010.

Dr. P. K. Bajpai attended Sensitization cum training workshop for Nodal officers of Project Information Management System of ICAR (PIMS-ICAR) on November 11, 2010 at CIAE, Bhopal.

Dr. Om Prakash (T-6) attended 75th Annual Convention of Indian society of Soil Science and National Seminar/ Symposium on Development of Soil Science-2010/Sodic land from November 14-17, 2010 held at Indian Institute of Soil Science, Bhopal.

Dr. Radha Jain attended National conference of Plant Physiology on November 25-27, 2010 at BHU, Varanasi.

**PERSONALIA****New arrivals**

Dr. T.K. Srivastava, Head, Crop Production joined on 01.12.10.

Shri Sunil Kumar, Administrative Officer, joined on 20.12.10.

Shri Nand Kishore, T-1 (Driver), joined on 08.09.10.

Shri Rakesh Kumar Shrivastava, T-1 joined on 13.10.10.

Shri Kuldeep, T-1 joined on 12.11.10.

Shri Amar Kumar, LDC joined on 09.11.10.

Km. Rupam Rani, LDC joined on 08.12.10.

**Superannuation**

Dr. D. V. Yadav, Head, Crop Production retired on 31.07.2010.

Smt. Pushpa Srivastava, UDC retired on 31.07.10.

Mohd. Israil, T-1-3 retired on 31.08.10

Shri Gopal Singh, T-1-3 retired on 30.09.10

Shri Sunder Lal, Assistant retired on 31.10.10

Smt. Ram Kumari, SSS retired on 30.11.10

Dr. P. N. Singh, Pr. Scientist retired on 31.12.2010

**Relieved/Transfer**

Shri Rajeev Lal, Sr.A. O. relieved on 12.10.10 to join CIFRI, Barrackpur as Chief Administrative Officer.

Shri A.M. Srivastava, relieved on 19.10.10 to join CISH, Lucknow on deputation as Assistant Administrative Officer.

Shri Brahm Prakash, T-7-8 joined IISR on 04.08.10, on transfer from IIPR Kanpur.

Shri C.P. Singh, T-7-8 joined IISR on 16.08.10, on transfer from DGR, Junagad.

Shri Ram Murti, T-5 joined IISR on 16.08.10, on transfer from VPKAS, Almora.