



IISR NEWSLETTER

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Implements for sugarcane cultivation: commercialized

The requirement of sugarcane is estimated to be 495 million tonnes by 2025 to meet the growing sugar and energy demand of the country. Since the area under sugarcane may stabilize between 4.5-4.75 million ha, a sustained increase in productivity level to the tune of 100-110 tonnes cane/ha will be required to meet this demand. It is well known in agriculture that timely operations alone can boost the yield level considerably. Mechanization helps in accomplishing cultural operations on time and precise application of critical inputs enhances the input use efficiency.

In India, sugarcane farming is mostly in the hands of small and marginal farmers with land holding less than one hectare. Such farmers can hardly afford the cost of equipments to reap the benefits of mechanization. Therefore, a concerted effort is needed on the part of researchers, sugar industry, private entrepreneurs and manufacturers of agricultural implements to make these implements available to the sugarcane farming community at an affordable cost. A hire-purchase system may become handy to increase the use of these equipments to boost sugarcane yield. To reduce the ownership cost, multifunctional equipments need to be designed and developed.

Since the inception of IISR in 1952, the Division of Agricultural Engineering is actively engaged in the design and development of various implements needed for sugarcane cultivation. In the beginning, emphasis was laid on manual and animal operated equipments like bullock-drawn planters and intercultural equipments but with the growing need, the emphasis is now on tractor and power operated equipments like sugarcane planters, raton management device, etc.

IISR, with its limited capacity, is striving hard to increase the production of these successful prototypes and to meet the ever increasing demands of end users. To increase the availability of these equipments, IISR has gone ahead with forging private-public partnership for the mass production of these equipments. In this direction, willing and reputed agricultural equipment manufacturers have roped in with MOA. The willing manufacturers were provided with necessary technical know-how of these equipments. Currently two manufacturers viz. M/S Gobind Industries, Barabanki and M/S Sunlight Foundry, Barabanki have taken up the manufacturing of these equipments. The details of seven commercialized equipments are as under:

- Raton management device**
(Approx. cost Rs. 73,000)
- Two row pit digger**
(Approx. cost Rs. 53,000)
- Raised-bed seeder**
(Approx. cost Rs. 15,000)
- Modified two row sugarcane cutter-planter (ground wheel drive)**
(Approx. cost Rs. 30,000)

- Ridger type sugarcane cutter-planter (PTO drive)**
(Approx. cost Rs. 39,000)
- Raised-bed seeder-cum-sugarcane cutter-planter**
(Approx. cost Rs. 38,000)
- Multipurpose sugarcane cutter-planter**
(Approx. cost Rs. 43,000)
- Modified two row sugarcane cutter-planter (ground wheel drive)**
(Approx. cost Rs. 30,000)

Hindi Saptah/Pakhwara

"Hindi Saptah" was observed from 14-21 September 2007. Various programmes were organised to encourage use of Hindi in day-to-day office working and scientific communications. Several competitions involving the staff members across the categories were held. Director, IISR distributed the prizes. In his address he urged that one should get oneself totally involved to increase the use of Hindi in different spheres of life.

DUS meeting
VIII Meeting of Task Force II for "Finalization of DUS test guidelines, special tests and agronomic practices of sugarcane, Inseed and sesame" was held at IISR, Lucknow on 11-12 September 2007.

Identification of sugarcane variety CoLk 94184 for commercial release

CoLk 94184 (Birendra), a high sugar early maturing sugarcane variety developed by IISR was identified for cultivation in the North Central Zone comprising eastern Uttar Pradesh, Bihar, Jharkhand and West Bengal. It is an excellent ratooner and tolerant to both drought and waterlogging stresses. The variety has recorded a yield of 75.97 t/ha, CCS 9.28 t/ha and sucrose 17.9%.

Visits
Dr. C. D. Mayee, Chairman, ASRB, New Delhi visited the Institute on 14 July 2007. He visited different laboratories and engineering workshop. A demonstration of different technologies and equipments was also organised. He interacted with the scientists to understand the intricacies of the ongoing research. He also addressed the scientists regarding policies of ICAR in relation to appointment and career advancement.

Dr. Basant Rani, Vice Chancellor, RAU, Bihar visited IISR with a team of scientists to understand the nuances of sugarcane research so as to initiate research of sugarcane in the said university.

During this period other prominent visitors were Dr. P. L. Gautam, Dr. H. P. Singh, Dr. Nawab Ali, Mr. A. K. Upadhyay, Dr. Pitam Chandra, Dr. V. J. Varshese, Dr. S. Nagarajan, Dr. D. G. Hapse, Dr. Y. S. Nerkar, Dr. K. C. Jain and Dr. R. T. Patil.

AICRP Group Meeting

The group meeting was held at the College of Agriculture (MPKV), Pune from 9-11 October, 2007. Inaugural session was held under the Chairmanship of Dr. R. B. Deshmukh, Vice Chancellor, MPKV. Dr. D. G. Hapse, ex Director, VSI, Pune was the Chief guest. Dr. K. C. Jain, ADG (CC), ICAR, Dr. R. L. Yadav, Director, IISR, Lucknow, Dr. N. Vijayan Nair, Director, SBI, Coimbatore, Prof. S. K. Saini, GBPUA&T, Pantnagar; Dr. P. Padmanabhan, SBI, Coimbatore, Dr. A. S. Patel, VSI, Pune and Dr. M. B. Patel, GAU, Navsari along with participants from different cooperating centres participated in the meeting. Dr. O. K. Sinha, Project Coordinator (Sugarcane) presented the Annual Progress Report for 2006-07. During this period, 32.84 kg of fluff was supplied to AICRP centres for seedling raising and a total of 27 genotypes were found promising in all the five agroclimatic zones.

From IISR, Lucknow other participants were Dr. D. V. Yadav, Dr. Menli Lal, Dr. Raman Kapoor, Dr. S. K. Gangwar, Mrs. Sunita Lal, Dr. S. R. Prasad, Dr. S. N. Singh, Dr. B. L. Singh and Dr. Om Prakash.

AP CSN Network Project on Sugarbeet

The Annual Review meeting of this project was held at VSI, Pune on 12 October 2007. The project has been extended up to July 2008 to fine-tune the package of practices for sugarbeet cultivation for the tropical agroclimate.

Discussion on Contract and Corporate Farming
A panel discussion was organized on contract and corporate farming under the Chairmanship of Dr. R. L. Yadav on 11 July 2007. Panel of experts were Dr. R. S. Verma, Dr. R. K. Singh and Dr. A. K. Sah. With the globalization and

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commercialization of agriculture, contractual farming has become the talk of the day. More and more farmers are getting attracted to these new opportunities without understanding the pitfalls and long term effect on the soil and biosphere. A general consensus emerged that a balanced approach towards contract and corporate farming has to be followed to guard the larger interest of majority of Indian farmers who are either small or marginal.

National Symposium on Seed Cane

IISR, Lucknow and Association of Sugarcane Technologists of India (ASTI), Lucknow jointly organised the symposium on "Seed Cane" from 27-28 September 2007. The symposium was attended by more than 150 delegates. Dr. R. K. Chowdhury, ex OSD, DSR & PC (NSP), IARI, New Delhi chaired the session of Seed Act, Seed Standards and Certification; Dr. S. B. Singh, Director, UPICSR, Shahjahanpur chaired the second session on Seed Cane Quality. The session on 'Seed production techniques' was chaired by Dr. D. V. Yadav, PS & I/C, RCM and the session 'Management of seed nurseries' was chaired by Dr. O. K. Sinha, PC, Sugarcane. Dr. M. L. Agrawal, ex Addl. Director, UPICSR, Shahjahanpur chaired the session 'Seed multiplication and replacement'. In addition to these technical sessions, Poster session was also held under the Chairmanship of Dr. A. C. Srivastava.

In his opening remarks, Dr. R. L. Yadav outlined the importance of seed cane with the saying 'Morning shows the day, so does the seed and emphasized that response and efficiency of all other inputs rest on the seed. Sugarcane has now come under the fold of Seed Act and needs suitable checks and balances at different levels from the production of nucleus seed to the actual use of certified seeds by the farmers. A concept of seed packaging with fortification of plantlets with beneficial microorganisms was visualized.

From the deliberations, it emerged that seed consciousness has to be revitalized to harness the potential yield. Agribusiness of seed cane has to follow the prescribed seed standards- the methodology for certification and seed testing of sugarcane should be worked out along with the training of manpower. Value addition of seed cane with the fortification of beneficial microorganisms like *Glucanacetobacter* (for nitrogen economy), and *Methylobacterium* (for increasing tolerance to diseases) should be part of the seed production and distribution scheme. Heat treatment, being the most eco-friendly and effective against several diseases, should invariably be used at nucleus or breeder seed production level. Innovative methods should come to reduce the seed requirement, foster multiplication of seed and to keep the pests and diseases at bay. It also emerged that seed replacement and varietal replacement should be treated as two separate programmes so that appropriate strategy could be followed locally. It was emphasized that some centrally sponsored scheme should be initiated to coordinate the seed cane production activities in an organised manner throughout the country and a need for active participation of research institutes, cane development departments and the sugar mills, besides the involvement of farmers was required.

IRC Meeting

Institute Research Council Meeting was held from 1-4 November 2007 under the Chairmanship of the Director. He stressed that IRC deliberations form a very important and integral part in the growth of the Institute. The final session of the meeting was also attended by Dr. P. L. Gautam, DDG (Crop Sciences). He appreciated the work done by the Institute in the past for the betterment of sugarcane cultivation in India. Reviewing the ongoing work, he stressed the need to remain focussed to economic time and energy. He urged to invigorate the young minds to come out with technologies that will advance the sugarcane farming in India.

Training for Sugarcane Development Personnel

IISR is regularly organising one-month training for sugarcane development personnel to abreast them with current knowledge of sugarcane farming. This training is becoming popular and gradually drawing attention of international trainees. This year one trainee from Egypt attended this training. In addition to trainees from various sugar mills of Uttar Pradesh, six trainees from Haryana also attended the training.

Other Trainings

During this period three students were enrolled for 90 days training in Biotechnology.

Winter School on Jaggery

Jaggery, popularly known as 'gur' is manufactured mostly in unorganised sectors of small-scale industries and by village craftsmen employing traditional methods and equipments. This sector lacks trained manpower; adequate knowledge of new equipments and technology and thus poses a major bottleneck in improving the quality of jaggery and its availability round the year. To improve this knowledge gap IISR, Lucknow with the help of ICAR, New Delhi, CIHET, Ludhiana and SAUs organised a 21-day winter school from 10-30 December 2007. Twenty participants from eight states viz., U.P., A.P., Maharashtra, Karnataka, Kerala, Rajasthan, Uttarakhand and West Bengal were enrolled. The training was inaugurated by the Director, IISR, Lucknow, Dr. Nawab Ali, DDG (Agri. Engg.), ICAR, New Delhi was the Chief Guest in the valedictory function.

Krishak Gosthi

Farmers regularly visit IISR to acquaint themselves with the latest technologies of sugarcane farming and to identify possible solutions of their immediate problems. During this period 190 farmers visited IISR from different parts of India.

Krishki Vigyan Kendra & Kisan Call Centre

The KVK, housed at IISR regularly imparts both on-campus and off-campus trainings to farmers, farm families and rural youth in diverse fields of agriculture, animal husbandry and home sciences. During this period, 29 trainings were organized in which a total of 719 participants got enrolled in various programmes.

KVK also organised Front Line Demonstrations (FLD) on different crops like wheat, jowar, mustard, pea, berseem, sugarbeet, potato, etc. covering 44 ha. Vaccination of 1000 animals against FMD (Foot and mouth disease) and HS (Galyhoty) disease was also organised in the villages of Lucknow and Barabanki districts.

A document of Frequently Asked Questions (FAQs) on Sugarcane cultivation and their answers was prepared and submitted to ICAR for its inclusion in the ICAR website.

Awards/Honour

Dr. S. Solomon, Principal Scientist was nominated as a Fellow of the Sugar Technologists Association of India, New Delhi.

Dr. Ashok K. Shrivastava, Principal Scientist received consolation prize in *Oral literature category* of the "Indian Literature Golden Jubilee Literary Translation Prize Competition" organised by Sahitya Academy, New Delhi.

Superannuation

During this period following persons were superannuated from their respective services.

- Mr. Hari Lal, Technical officer on 31.07.2007.
- Dr. Abdul Rashid, Principal Scientist on 31.07.2007.
- Dr. A. N. Singh, Principal Scientist on 31.07.2007.
- Mr. Sajeevan Lal, T3 on 30.11.2007

Transfer/Relieving

Dr. (Mrs.) Hema Pandey, Principal Scientist joined IISR, Lucknow on transfer from NRC for Women in Agriculture, Bhubaneswar on 27.10.2007.

Dr. S. N. Singh, Principal Scientist joined IISR, Lucknow on transfer from IISR Regional Centre, Motpur, Bihar on 05.11.2007.

Joining

Dr. Devendra Kumar, Senior Scientist (Plant Breeding) joined IISR Regional Centre, Motpur, Bihar, on 04.08.2007.

Mr. Rajeev Lal, Sr. AO joined on 20.08.2007 after completing the course work for Post Graduation Diploma in Public Policy and Management from MDI, Gurgaon.

Career Advancement

During this period following persons got promotion in their respective service careers:

- From Scientist(SS) to Sr. Scientist, w.e.f.
 - Dr. A. K. Sah 12.12.2006.
 - Dr. M. R. Singh 17.12.2006.
 - Dr. Arun Baltha 20.12.2006.
 - Dr. Sanjeev Kumar 22.12.2006.
- Upgradation of pay scale under ACP scheme, w.e.f.
 - Km. Maya Agarwal, UDC 03.07.2007.
 - Smt. Raj Shankar, UDC 15.11.2007.
 - Sh. Bikram Singh, LDC 09.10.2007.
 - Sh. Ganesh Prasad, Jr. Steno. 18.10.2007.

Participation in Seminar/Symposia

Dr. R. L. Yadav, Dr. D. V. Yadav, Dr. K. P. Singh and Dr. S. K. Shukla attended two-day National Seminar on "Organic Agriculture: Hope of Posterity" at UPCAR, Lucknow on 13-14 July 2007.

Dr. D. V. Yadav participated in the meeting on "Screening-cum-Technical Evaluation Committee for National Awards for R&D Efforts in Industry-2007" organised by the Ministry of Science & Technology, Govt. of India, at Technology Bhawan, New Delhi on 7 August 2007.

Dr. D. V. Yadav attended the three-day workshop on "Rajbhasha Hindi" at NAARM, Hyderabad from 4-6 September 2007.

A strong contingent of 72 delegates from IISR participated in the National symposium on "Seed Cane" organised jointly by IISR, Lucknow and ASTI, Lucknow on 27-28 September 2007.

Dr. R. L. Yadav, Dr. D. V. Yadav and Dr. Rajesh Kumar participated in the 10th National Scientists' Conference in Hindi "Vishvikanan ke paripaksh mein krishi evam sambandhit upadok ke gunatmak vidhi evam sanrakshan hetu bhavi shod ushyan" in the capacity of President, Chairman, Poster session and Organising secretary of the conference, respectively. The conference was organised by Bharatiya Krishi Anusandhan Samiti, Karnal on 26-28 October 2007 at IISR, Lucknow.

Dr. D. V. Yadav, Dr. Menli Lal, Dr. S. N. Singh and Dr. A. K. Sharma attended the National seminar on "Sustaining Soil Health for Higher Crop Productivity" organised by *Krishi Evam Gramin Vikas Sewa Samiti*, Lucknow from 30-31 October 2007.

Dr. Arun Baltha participated in the QRT meeting of the Project Directorate Biological Control (PDBC), Bangalore at GBPUA&T, Pantnagar on 19 November 2007.

Dr. P. K. Bajpai and Dr. Rajesh Kumar attended Annual conference of the Indian Society of Agricultural Statistics at Birs Agricultural University, Ranchi from 30 November to 02 December 2007.

Human Resource Development

Mr. S. S. Hasan attended the training on 'Spatial and Non-spatial Information Management and Data Mining in Agriculture' at IASRI, New Delhi from 13 November to 03 December 2007.

Dr. V. K. Singh, Dr. Kamata Prasad and Er. Dilip Kumar attended the Winter School on "Processing, Handling, and Storage of Jaggery from Sugarcane" at IISR, Lucknow from 10-30 December 2007.

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