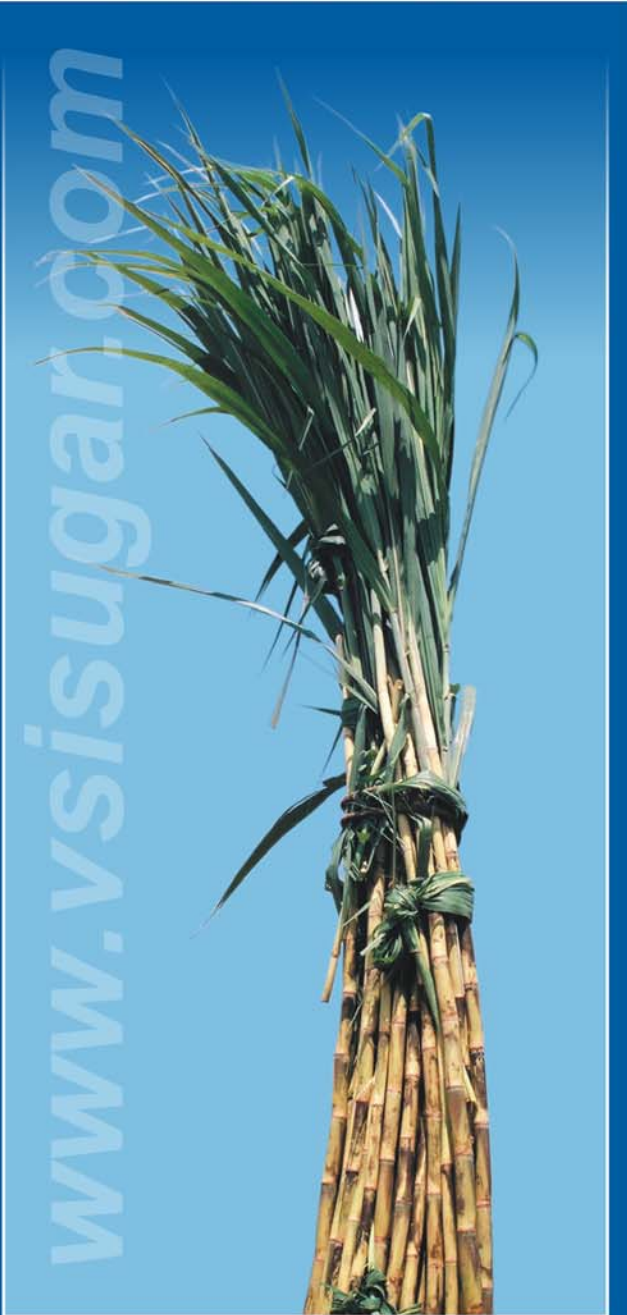


VSI Bulletin

Dedicated service to sugar industry since 1975

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**VASANTDADA
SUGAR
INSTITUTE**

Foreword...

The first quarter of year 2010 is over. It was a busy quarter with important events such as the annual general meeting, republic day celebrations, national level training programs and workshops for cane growers. The institute also had many high profile visits for knowledge sharing on technologies under research and developed by VSI.

On the industry front in Maharashtra, sugar production for the season is now estimated at around 6.5 million tons largely due to improvement in sugarcane yield due to good rainfall late last crop year. Many sugar factories can expectedly overrun their crushing season till April end or Mid-May.

The country's sugar production was estimated at around 16 million tons because of lower sugar production estimates in two major contributing states UP and Maharashtra. The present situation indicates increase in sugar production in both states and this has revised Indian sugar production estimates at around 17-17.5 million tons.

With current issue of VSIBulletin readers can have insight of the efforts by the Institute in the areas of Research and Human Resource Development in the Sugar Industry. Readers are welcome to post their comments or feedbacks to vsibulletin@vsisugar.com

(A. A. Prabhavalkar)
Editor

ANNUAL GENERAL MEETING



The Annual General Meeting (AGM) of the institute was held on 3rd January 2010. Shri. Ashok Chavan, Chief Minister, Maharashtra State was the chief guest and Shri. Sharadchandra Pawar, President, VSI chaired the meeting. It was a special event with a large gathering of members from Board of Directors and representatives of the co-operative sugar factories, Maharashtra State Sugar Federation (Sakhar Sangh), farmers and VSI employees. The President released VSI's

annual publications on performance of the cooperative sugar industry in the state viz. technical performance, distillery performance and financial performance of co-operative sugar factories. Various awards for excellence were given to the best sugar factories, personnel from sugar factories, farmers and VSI employees, felicitated by the chief guest.

AWARDS FOR EXCELLENCE



Pandurang S.S.K. Ltd., Solapur received 'Late Vasantdada Patil' award for the best overall performance in Maharashtra State.



Datta Shetkari S.S.K. Ltd. (Shirol), Kolhapur received award for 'The Most Innovative Co-operative Sugar Factory' in Maharashtra State



Sanjivani S.S.K. Ltd., Ahmednagar received 'The Best Distillery' award in Maharashtra State



C.N. Deshpande, MD, Bhaurao Chavan S.S.K. Ltd., Nanded received award for 'The Best Managing Director' of a co-operative sugar factory in the State.

ANNUAL GENERAL MEETING



D.R.Parlekar, Kranti S.S.K. Ltd, Sangli received 'The Best Agriculture Officer' award.



Balaso S.Jadhav, Kolhapur received 'Late Yashvantrao Chavan' award for achieving highest sugarcane yield (352.59 tons per hectare) in the State for pre-seasonal crop.



Ramesh N. Chougule, Sangli received 'Late Vasantnao Naik' award for achieving highest sugarcane yield (256.66 tons per hectare) in the State for seasonal (suru) crop.



Ramesh V.Jadhav, Kolhapur received 'Late Annasaheb Shinde' award for achieving highest sugarcane yield (288.93 tons per hectare) in the State for ratoon crop.



Sunil Kotwal, Farm Management and B.B. Wadgule, Tissue Culture section received Awards of the Best Employees of VSI



The 61st Republic Day Celebrations



VSI celebrated 61st Republic Day of India on 26th January 2010. National flag was hoisted by the Hon'ble Director General, Shri. Shivajirao Deshmukh. On this occasion, prizes were awarded to successful children of the employees those achieved academic excellence.

Indo-Us Workshop on Silicon in Agriculture



University of Agricultural Sciences (UAS), Bangalore, India and Louisiana State University, (LSU), USA under the aegis of INDO-US Science and Technology Forum (IUSSTF), New Delhi organized Indo-Us workshop on Silicon in Agriculture during 25th – 27th Feb 2010 at the University of Agricultural Sciences, Bangalore. Mr. D. B. Phonde, Scientist, Soil Science was invited by UAS, Bangalore and LSU, USA with the financial support of IUSSTF, New Delhi for his keynote presentation on “Response of Sugarcane to

Silicon levels and sources in medium deep black soils” in the Indo-Us workshop on Silicon in Agriculture. The research on silicon nutrient management in sugarcane was initiated at Vasantdada Sugar Institute in 2003.

XVIII International Symposium on Alcohol Fuels (ISAF)

The XVIII International Symposium on Alcohol Fuels (XVIII-ISAF) was organized jointly by All India Distiller's Association (AIDA) & ISAF at Surajkund, New Delhi from 8th to 12th March 2010.

Scientists from the department of Alcohol Technology presented the following three papers during this event.

1. "Water Conservation in Distilleries" presented by Mr. S.V. Patil, Technical Advisor & Head.



Inauguration of XVIII-ISAF

2. "A simple, rapid & Precise Gas Chromatographic (GC) method for quantitative analysis of volatile compounds in alcoholic beverages & spirits" presented by Mr. S.P. Takle, Technical Officer-Analytical.

3. "Influence of nitrogen supplementation on the alcoholic fermentation by thermotolerant strain *S. cerevisiae*" presented by Mr. R.V. Burase, Assistant Technical Officer.



Mr. S.V. Patil in discussion with other delegates

Congratulations



Ms. Gauri Arvind Nerkar, working as Senior Research Fellow (SRF) in Molecular Biology & Genetic Engineering (MB&GE) lab, has been awarded with the very prestigious German Academic Exchange Service (DAAD) scholarship under sandwich model program for Ph.D. degree. The fellowship is for a period of two years. Under this program she will work with Dr. Ralph Bock, Director, Max Planck Institute of Molecular Plant Physiology (MPIMP), Germany on the project entitling 'Development of Chloroplast transformation system in sugarcane'. She will be leaving for Germany on 1st June 2010. We wish her all the best.

New Project – DAE-BRNS sponsored

VSI has received a research project entitled “Induced Mutagenesis: Selection for Salinity tolerance and molecular characterization of tolerant lines in sugarcane” from Department of Atomic Energy-Board of Radiation and Nuclear Sciences (DAE-BRNS), Govt. of India (Project No.2009/37/ 51/BRNS/3306, Dt. 04.03.10) for a period of 3 years starting from 1st April 2010. Dr. R.M. Devarumath is the Principal Investigator of the project and Dr. K.H. Babu, Mr. P.N.Tawar, Mr. P.G. Kavar and Mr.A.A. Nikam are the Co-Investigators of the project. Dr. Suprasanna, Head, Functional Plant Biology & Section, Nuclear Agriculture & Biotechnology Division, BARC, Trombay, Mumbai is the Principal Coordinator of this project.

Farmer-Scientist-Extension Worker Interface Program

VSI conducted three Farmer- Scientist- Extension Worker Interface Programs sanctioned under direct funded component of Macro-Management Scheme by Directorate of Sugarcane Development, Lucknow, financed by Ministry of Food And Consumer Affairs, New Delhi at three sugar factories in Maharashtra. Details of the programs are given below :

S.No.	Date	Name of Sugar Factory	Subject to be Covered
01.	23/03/2010	Shri. Chatrapati S.S.K. Ltd. Bhavaninagar, Tal : Indapur, Dist : Pune	1. Introduction to new sugarcane varieties. 2. Advances in sugarcane cultivation. 3. Irrigation Management. 4. Sugarcane pest and disease control.
02.	26/03/2010	Indira Gandhi Bharatiya Mahila Vikas S.S.K. Ltd., Bhudargad, Dist : Kolhapur	1. Introduction to new sugarcane varieties. 2. Advances in sugarcane cultivation. 3. Sugarcane Ratoon Management. 4. Sugarcane pest and disease control.
03.	30/03/2010	Samarth S.S.K. Ltd., Ambad, Dist : Jalna	1. Introduction to new sugarcane varieties. 2. Advances in sugarcane cultivation. 3. Sugarcane Ratoon Management. 4. Sugarcane pest and disease control.

Scientists from VSI, Block Agricultural Extension Officers of the State Government and about 600 sugarcane cultivators participated during these three interface programs. The participants discussed advanced technologies regarding sugarcane cultivation, irrigation management, ratoon management, introduction to new sugarcane varieties and sugarcane pest and disease control.

National Level Training Programs

The Directorate of Sugarcane Development, Lucknow under Macro Management Mode of Agriculture Scheme of the Government of India, Ministry of Agriculture, New Delhi, allotted total four National Level Training Programs. One program was conducted by Agriculture Engineering and three were conducted by Crop Improvement Division. Details of which are given below-

National level Training Program on Relevance of Microirrigation in Sugarcane Productivity (6th to 8th January 2010)

A National Level Training Program on “Relevance of Microirrigation in Sugarcane Productivity” was conducted for Research Scientists, Agriculture Officers and Cane Development Officers of the sugar factories in the state during 6th to 8th January 2010 at VSI. The program was attended by 20 trainees. Dr. S. H. Shinde, Principal Scientist & Head, Crop Production Division inaugurated the program.

The subjects covered included different microirrigation systems, design of drip and sprinkler irrigation, raingun sprinkler irrigation, agronomic practices in relation to microirrigation, irrigation scheduling and crop water requirement, soil fertility, fertilizer management and fertigation, microsprinkler irrigation systems, care and maintenance of microirrigation systems and practicals on study of raingun sprinkler and drip irrigation and its field evaluation, chemigation and fertigation. The guest lecturers Prof A. B. Deshpande from College of Agriculture, Kolhapur, Dr. R. D. Bansod from College of Agriculture, Pune and Dr. R. S. Dhotre, Ex-Head, Irrigation & Drainage Engineering, College

of Agricultural Engineering, Rahuri delivered the lectures on design and application of sprinkler irrigation in sugarcane, microsprinkler systems and their applications and irrigation scheduling and crop water requirement of sugarcane under drip irrigation respectively.

The trainees were also taken to High-tech Floriculture project at College of Agriculture, Pune to update their knowledge on green house cultivation of different flowers with microirrigation & fertigation technology. The trainees took active participation and had quiet fruitful discussions to make microirrigation successful in sugarcane agriculture.

In the concluding session, the participants expressed their satisfaction over excellent management of the training program and stressed the need of more such training program for refreshment of their knowledge. The concluding remarks were given by Dr. S. H. Shinde, Principal Scientist & Head, Crop Production Division. Mr. A. S. Deshmukh, Sr. Scientist and Mr. P. P. Shinde, Scientist, Agricultural Engineering coordinated the training program.

National level Training Programs By Crop Improvement Division

Three programs of three days each were conducted by the Crop Improvement Division, VSI on topics –

S.No.	Duration	Duration	No. of Participants
01	Varietal Planning for increasing sugar recovery	2nd - 4th February 2010	19
02	Sugarcane cultivation in biotic and abiotic stress condition	9th - 11th February 2010	13
03	Relevance of varieties in improving sugarcane recovery	16th - 18th February 2010	17

Training program 1

The first of three programs - 'Varietal planning for increasing sugar recovery' commenced on 2nd February 2010. Nineteen participants from Karnataka Sugar Institute, Belgaum, Karnataka, Agriculture



Department of Govt of Maharashtra and officers from Sugar factories in the State attended the program. Dr. R.S. Hapase, Head, Crop Improvement Division and Principal Scientist (Plant Breeding), VSI welcomed the participants. In this training program, the speakers (faculty) delivered their lectures on various topics viz., sugarcane and sugar industry in India: future thrusts, sugarcane varieties in India and standards for identification of sugarcane varieties, sugarcane improvement program: an overview and future thrust, Effect of flowering on sugarcane yield and sugar recovery, agronomic aspects for enhancing sugarcane productivity, integrated nutrient

management for sustainable sugarcane and sugar productivity, irrigation water management in sugarcane, importance of seed nursery in enhancing sugarcane productivity and its effect on sugar recovery., importance of sugarcane varietal planting, planning of harvesting program, importance of pest management for high cane and sugar recovery, importance of disease management for high cane and sugar recovery and profitability in sugarcane cultivation with low cost technologies and execution of cane development schemes through Sugar Development Fund (SDF).

Training program 2

The second program - 'Sugarcane cultivation in biotic and abiotic stress condition' commenced on 9th February 2010. Thirteen participants that include Scientists from Haryana Agriculture University, Regional Research Station, Karnal, Haryana, Officers from Agriculture Department, Govt. of Maharashtra and Sugar factories in Maharashtra attended the training program.



In second training program, different faculties including lecturer from College of Agriculture, Pune delivered lectures on various topics viz., sugarcane and sugar industry in India: Future thrusts, physiological aspects in relation to increasing cane productivity and sugar recovery, breeding sugarcane varieties for biotic and abiotic stress, weed management in sugarcane, disease management in

drought, pest management in stress condition in sugarcane, drip irrigation in sugarcane: importance, benefits, care and maintenance, agronomical aspects related to stress management in sugarcane, integrated nutrient management in sugarcane, sugarcane cultivation in biotic and abiotic condition and importance of agro-chemicals & fertilizers in management of drought in sugarcane. In the concluding session, participants remarked that the stress condition is the most crucial factor in agriculture throughout the country and the information received during three days training program on sugarcane cultivation in biotic and abiotic stress condition will be useful for them to increase recovery and productivity.

Training program 3

The third program - 'Relevance of varieties in improving sugarcane recovery' commenced on 16th February 2010. Seventeen participants including officers from Agriculture Department, Govt of Maharashtra and Sugar



factories of Maharashtra attended the training program. The faculty members delivered lectures on various topics viz., sugarcane and sugar industry in India: future thrusts, sugarcane varieties in India and standards for identification of sugarcane varieties, development of sugarcane varieties in India, effect of flowering on sugarcane yield and sugar recovery, agronomic aspects for enhancing sugarcane productivity, role of integrated nutrient management for increasing yield and recovery of sugarcane, irrigation water management in sugarcane, importance of seed nursery in enhancing sugarcane productivity and its effect on sugar recovery, importance of sugarcane varietal planting,

planning and harvesting program, importance of pest management for high cane and sugar recovery, importance of disease management for high cane and sugar recovery and profitability in sugarcane cultivation with low cost technologies and execution of cane development schemes through Sugar Development Fund (SDF).

For all three programs, certificates were given to the participants for successful completion of training programs.

Training for progressive farmers and extension officers

Training for Extension Officers of Uttar Pradesh



A three days short-term training program on 'Advanced Technologies in Sugarcane Agriculture' for 20 extension officers was held during 13th to 15th January 2010 at VSI. The training was sponsored by Commissionerate of Sugarcane, Lucknow, Uttar Pradesh (UP). During the program, scientists from VSI delivered the lectures on different aspects of sugarcane agriculture viz., varietal and seasonal planning, sugarcane varieties, advanced sugarcane agronomical practices, integrated soil fertility management, seed nursery management, tissue culture techniques and biotechnology in sugarcane agriculture, conventional and modern irrigation techniques, farm mechanization, agriculture economics, use of

biofertilizers and integrated pest and disease management. Brief notes on above topics in the form of the booklet were also provided to them. Trainees visited Vignahar S.S.K.Ltd., sugar factory at Junnar for the cane development activities carried out by the factory and the actual package of practices followed by the farmers.

Training for progressive farmers of Bihar State



Training program on “Advanced Technologies in Sugarcane Agriculture” for progressive sugarcane farmers from Bihar State was conducted during 9th to 11th February 2010 by VSI. The farmers' training was sponsored by Cane Development Department of Government of Bihar. Fifty sugarcane growers attended in-house training at VSI on 9th February, visited Sanjivani (Takli) S.S.K. Ltd. sugar factory at Kopargaon on 10th February and Central Sugarcane Research Station (CSRS), Padegaon on 11th February 2010. Farmers learnt about the sugarcane cultivation practices being adopted by sugarcane growers in Maharashtra State and

also research findings generated at CSRS. During the training, scientists from VSI delivered the lectures on different aspects of sugarcane agriculture viz., sugarcane germplasm, modern sugarcane cultivation practices, integrated fertilizer management, irrigation management by conventional and modern irrigation techniques, farm mechanization and crop protection. The team of farmers was led by Mr. P.K.Zha, Deputy Director, Cane Development, Pusa, Bihar. The Deputy Director and cane growers expressed satisfaction regarding the conduct of training program.

In both training programs, trainees visited different laboratories and VSI farms where they discussed the use of different technologies applicable in agro- climatic conditions of Bihar and UP respectively. Practicals were conducted at various sections of the Agriculture Division. Trainees expressed immense satisfaction regarding the training programs.

National Environment awareness campaign 2009-10



Department of Environmental Sciences, VSI participated in National Environment awareness campaign (NEAC) 2009-2010 launched by Ministry of Environment and Forest (MoEF). The theme for 2009-10 was “Climate change” under this theme Ministry of Environment and Forest has identified sub-theme for conducting campaign. MoEF had approved the project proposal submitted by Environmental Sciences Department. Sub-theme given to the department was Public Biodiversity Register. To conduct this awareness activity Department of Environmental Sciences selected students as target group and identified 'Janata Vidyalaya' School at Pimpri Sandas.

The staff visited the school conducted the program with the help of the to Headmaster Mr.S.A Patil. Initially some documentary films on biodiversity followed by a lecture– emphasized the importance of biodiversity and significances of documentation of biodiversity at local level. Prof Ghole Head of Environmental Science Dept. and Mr. Deshmane have conducted lectures on Environment, Biodiversity and importance of biodiversity. School students from ninth standard participated in action/activity in preparing biodiversity register. MSc first year students of Environmental Science VSI have divided school students into different groups to collect information on different types of trees, birds, insects, reptiles agricultural crops etc that is present in their own village. Environmental Science student shown their keen interest in studying flora and fauna and guide to school students while collecting the data from village Pimpri Sandas. It gave a new vision to the participants school students towards their surroundings.

This activity was completed in two week. All information collected by school student is documented in Biodiversity register. In the concluding session of the activity VSI Director General Shri Shivajirao Deshmukh published the biodiversity register prepared by school students and VSI students. A microscope was also gifted to the school.

In this way department of Environmental sciences successfully completed National Environment Awareness Campaign 2009-10.

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VISITORS TO VSI

Visit of Belgium delegation – Trials on Sugarbeet Processing



A Belgium delegation visited VSI and meeting held on report of two years Belgium sugarbeet trials and future strategy for sugarbeet industry development in Maharashtra State. Group meeting of representatives from SESVanderHave Sugarbeet Co., Belgium and VSI was held on 24th March 2010. The issues and difficulties for sugarbeet production and processing were discussed. Hon. Shivajidada Patil, Vice President, Mr. Shivajirao Deshmukh, Director General, Dr. S.H. Shinde, Head, Crop Production Division, Dr. R.S. Hapase, Head, Plant Breeding, Mr. K.B. Kale, Sugar Engineer and Mr. P.V. Ghodke, Scientific Officer, Agronomy section from VSI and Mr. Bruno Vandame, Director, Mr. Gean Noel Errard, Manager from SESVanderHave participated in this interactive session. Research results of SESVanderHave sugarbeet varieties were presented.

Visit of Mr. Charles M. Moll, from MTD Products Inc., USA to VSI

Mr. Charles M. Moll, Chief Investment Officer, MTD Products Inc., USA along with there Business Development Director in India Mr. Amit Saha and Business partner Mr. Shekhar Padgilwar from M/s Padgilwar Agro Industries, Nagpur have visited VSI on 23rd February 2010 for technical discussion on agricultural scenario, sugarcane mechanization and its scope in India. Dr. S.H. Shinde, Principal Scientist and Head, Agriculture Crop Production Division briefed the visitors various activities of VSI and also sugarcane scenario in the State and National level, explained the sugarcane cultivation practices being followed in the State and India in general. Mr. P.P. Shinde and Mr. D.B. Phonde, Scientist from Agriculture Engineering and Soil Science sections respectively explained sugarcane mechanization present status and its future scope as well as nutrient management practices followed by farmers in Maharashtra State. The visitors were also shown sugarcane planter developed by VSI.

Visit of Delegation from Zambia

A delegation led by H.E. Mr. Walubita, High Commission, Zambia visited the institute on 19th March 2010 to explore the possibilities of collaboration between VSI and Zambia Government in the field of the Sugar Industry and training activities. Shri. Shivajirao Deshmukh, Director General welcomed all the delegates. highlighting the important activities and achievements of VSI was shown through VSI film. VSI Scientists and the members of delegation interacted on sugarcane agriculture, irrigation, scope for sugar industry & investments in Zambia and an establishment of full fledged training center in Zambia to cater the needs of African continent with respect to sugarcane cultivation & sugar processing. Delegation also visited Molecular Biology and Tissue Culture Departments and labs and took keen interest in understanding the activities of VSI in advanced research. Mr. Datin Sivalalita Jegathesan, Consultant, Zambian Investment Promotion Project along with Mr. Pradip Nagar, from TATA International were also the members of delegation.

Visit of Dr. Santosh Singh, representative of USDA

Dr. Santosh Singh, representative of USDA, New Delhi visited VSI on 4th March 2010. He was on visit to survey sugarcane and sugar situation in Maharashtra during current season 2009-10 and forthcoming 2010-11. In this regard, he also visited Sahyari S.S.K. Ltd. at Karad alongwith Statistical Officer Mr. M.R. Shinde from VSI.



Visitors visited to VSI during 2009-10

Sr.No.	Visitors	Number
1.	Farmers	4792
2.	Sugar factory officers	36
3.	Govt. Officials	99
4.	Private Organization Officials	7
5.	Outside State	568
6.	Krishi Vidyan Kendra	80
7.	Trainee Officers from other Institutes	79
8.	Overseas	20
9.	Students	644
Total Visitors		6325
Total No. of visits		142

Library Update (January 2010 - March 2010)

- 1) Weising, Kurt, Nybom, Hilde, Wolff, Kirsten & Kahl, Gunter
DNA fingerprinting in plants: Principles, methods and applications. (2nd edi.)
- 2) Nap.,Jan-Peter
Genomics for biosafety in plant biotechnology.
- 3) Avison, Matthew B.
Measuring gene expression
- 4) Manahan,Stanley E.
Environmental chemistry. (9th edi.)
- 5) Sinha, Prabhas C.
Ozone, endangered species, migratory species and heritage sites. [Global environmental law, policy and action plan series] (1st edi.)
- 6) Kumar Arvind
Pollution and biodiversity: Biosocial aspects.
- 7) Tiwari, B.D.
Sewage pollution and microbiology.
- 8) Yadav, B.S. & Shewale, Manjusha.B.
Advances in environmental biology and toxicology
- 9) Singh, Raj Vir
Watershed planning and management.
- 10) Barrass, Robert
Scientists must write. [A guide to better writing for scientists, engineers and students]
- 11) Hailman, Jack P. & Strier, Karen B.
Planning, proposing, and presenting science effectively. [A guide for graduate students and researchers in the behavioral sciences and biology]
- 12) Kim, Young J.
Atmospheric and biological environmental monitoring.
- 13) Agarwal, S.K.
Air pollution.
- 14) Chiras, Daniel D.
Environmental science.
- 15) Agarwal, S.K.
Heavy metal pollution.
- 16) Rajendran, S., Aravindan, S Rajakumar T.Jayavel & Sivakumar R.
Hyperspectral remote sensing and spectral signature applications.
- 17) Porwal, M.C.
Remote sensing analysis of environmental resources for planning and development.
- 18) Sharma, Sandhir
Business ethics and environment.
- 19) Ghosh, Asish
Environment and development.
- 20) Agarwal, S.K.
Environmental biotechnology.
- 21) Smith, Keith & Petley, David N.
Environmental hazards: assessing risk and reducing disaster.
- 22) Jain, A.K.
River pollution Regeneration and cleaning.
- 23) Vasistha, Kamal
Environmental management.
- 24) Ferry, Natalie & Gatehouse Angharad M.R.
Environmental impact of genetically modified crops.
- 25) Lal, Banwari
Environmental microbiology.
- 26) Jat, M.L. & Bhakar, S.R.
Ground water hydrology: Theory and practice.
- 27) Agarwal, S.K.
Water pollution.
- 28) Mitsch, William J., Gosselink, James G., Anderson, Christopher J. & Zhang, Li
Wetland ecosystems.
- 29) Matthews, Janice R. & Matthews Matthews, Janice R. & Matthews, Robert W.
Successful scientific writing. [A step-by-stip guide for the biological and medical sciences]
- 30) Rutkosky, Nita, Seguin, Denise & Rutkosky, Audrey
Office 2007. [Office 2007 with Windows XP and Internet Explorer 7.0]
- 31) Singh, S.N.
Climate change and crops.
- 32) Buchner, Thomas B. & Ewingen, Nicolas H.
Photosynthesis Theory and applications in energy, biotechnology and nanotechnology
- 33) Suresh, R.
Soil and water conservation engineering