

Science and Technology Reporter

A Quarterly Newsletter of the Haryana State Council for Science and Technology



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Messages



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A. R. Kidwai,
Governor, Haryana

It gives me immense pleasure to learn that the Haryana State Council for Science & Technology has planned to bring out a quarterly Newsletter entitled, "Science & Technology Reporter" with a view to apprising the readers regarding the importance as well as utilities of various scientific and technological activities being run by the Council in the State of Haryana for the benefit of the people.

Knowledge and information dissemination is an important step in achieving the desired results and help in creating an awareness of opportunities, building partnership, and forging the necessary linkages. I hope the readers will be updated with the development in the field of Science and Technology. I am sure the Newsletter will play a vital role in disseminating knowledge among its readers and in promoting a scientific temper among all strata of society.

I extend my best wishes for the successful publication of the Newsletter and also congratulate the Haryana State Council for Science and Technology on launching this literary and journalistic venture.

A. R. Kidwai
(A. R. Kidwai)



Bhupinder Singh Hooda
Chief Minister, Haryana

It gives me immense pleasure to know that the Haryana State Council for Science and Technology is launching a quarterly Newsletter "Science and Technology" Reporter.

This Newsletter came-out at this stage when the number of talented young students taking science as a major career. Haryana Government has recognized and honour the services of our talented scientists in this field and instituted to awards namely "Haryana Ratna" of Rs. 1 lakh for the Scientists and Technologists above the age of 40 years and "Haryana Yuva Vigyan Ratna" of Rs. 50,000 for the young scientists below 40 years.

I am sure that Science and Technology Reporter would capture the day-today events in the field of scientific research and its applications and it provide latest information to our scientists and technologists at their doorstep about this sector.

I wish the publication a grand success.

Bhupinder Singh Hooda
(Bhupinder Singh Hooda)



Kapil Sibal
Minister for Science & Technology
and Earth Sciences,
Government of India

I am very happy to learn that the Haryana State Council for Science and Technology is publishing a quarterly newsletter "Science and Technology Reporter." History bears testimony to the fact that the march of human civilization has been on the shoulders of Science & Technology. Dissemination is as important as discovery and invention so that the benefits of these flow to the common man. In this regard, I consider your initiative as important and timely one.

I wish all success to the Council in all its endeavours.

Kapil Sibal



Dharam Vir, IAS
Chief Secretary, Haryana

It is matter of great pleasure to know that Haryana State Council for Science & Technology is bringing out its quarterly newsletter "Science and Technology Reporter" pertaining very useful and effective information for those who are associated with Science and Technology.

The timely initiative of the Council to have a mouthpiece in the form of Science and Technology Reporter is a welcome step that will effectively network of scientists, teachers, industrialists and rural beneficiaries for exchange of information and ideas.

I hope that the publication reaches its entire target audience, so that science and technology can play a pivotal role in meeting the demands of the society in relation to health, industrial products and food security.

I wish the publication of the Haryana State Council for Science and Technology a grand success.

(Dharam Vir)



S.S. Parsad, IAS
Commissioner & Secretary to
Government, Haryana
Science & Technology,
Department

India's productivity and success in the highly competitive global market is increasingly reliant on science, engineering and technology skills. Haryana State Council for Science and Technology (HSCST) is state level agency playing pivotal role in promotion of science and technology in Haryana region. HSCST is doing commendable job in areas of tissue culture research, biotechnology, space research, science popularization, etc.

I am happy that HSCST is bringing out a Quarterly Newsletter "SCIENCE AND TECHNOLOGY REPORTER" with the objective to disseminate information to popularise science & technology in Haryana.

I hope that this endeavour will succeed in its mission with the support of all the stake holders.

(S.S. Parsad)



Sumita Misra, IAS
Director,
Science & Technology Department,
Haryana

FROM DIRECTOR'S DESK

The Department of Science & Technology (DST), Haryana was created on March, 1983. Priority areas of Department and its objectives are to identify, process and disseminate new technologies for Agriculture, Industry and other sectors; to advise the State Govt. on policy issues related to Science & Technology; to provide effective linkages of State Govt. Departments with R&D institutions, laboratories, universities and various central Govt. departments. The Department functions through two of its agencies namely: Haryana State Council for Science & Technology (HSCST); and Haryana Space Application Centre (HARSAC). Besides this the department also provides financial assistance for attending international conferences abroad.

Haryana State Council for Science & Technology (HSCST) is an autonomous body, a registered society, under the Societies Registration Act, 1860. The Council was constituted to advise the State Govt. on policies and measures for promoting Science & Technology in the State and to implement the policies & plans of the State Govt. more effectively and to utilize the funds received from various Central & State Govt. Agencies.

Various activities being taken up by the Council are grant –in aid to research and development projects, Collaborative science and technology programme, providing financial assistance for organizing workshops and seminars. The Council has sanctioned grant-in-aid to 13 projects during 2007-08 and 4 in the current financial year. The State Council has been implementing Science Popularization Programmes in the State through voluntary agencies, educational institutions and district administration. These programmes are aimed at developing scientific temper amongst different sections of people.

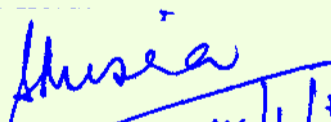
The Council in active collaboration with National Council for Science & Technology Communications (NCSTC) and Vigyan Parsar (autonomous organisations of DST, GOI) has initiated a number of programmes for school children, teachers and the general masses like essay writing competition for school and college students, science quiz contest and celebration of National Science Day. HSCST in collaboration with Haryana Vigyan Manch, an NGO and district administration organizes Children Science Congress simultaneously in all the districts by conducting Science Debate, on the spot Science Poster, Slogan Competition, Science Rally, Explaining Miracles, etc.

HSCST has formulated the Biotechnology Policy of the State of Haryana to promote biotechnology in general and industry in particular. Proposals for setting up Bio-Tech Park and Children –cum Science Park are also under consideration.

Centre for Research and Application in Plant Tissue Culture (CRAPTC), now renamed as Centre for Plant Biotechnology (CPB) located in the premises of CCS HAU, Hisar, was established jointly by the Department of Biotechnology, New Delhi and Haryana State Council for Science and Technology in 1st March, 2000.

A planetarium in memory of late astronaut, Dr. Kalpana Chawla has been set up at Kurukshetra with a total cost of Rs.6.50 crore with a seating capacity of 120 persons. This project is a joint venture of the State and Centre Govt. This prestigious project was inaugurated by Sh. Bhupinder Singh Hooda, Hon'ble CM Haryana on 24th July, 2007 and has been operational since then.

With the Council's commitment to bring the upliftment of the region through science and technology I am optimistic that the newsletter Science and Technology Reporter would serve in creating awareness among the readers on the latest developments in the said field.


(SUMITA MISRA) 14/1/09

Haryana Space Applications Centre (HARSAC), Hisar

Haryana Space Applications Centre (HARSAC), an autonomous body of the Department of Science and Technology, Haryana has been designated as a nodal agency by Haryana Government for Remote Sensing, Geographical Information System (GIS) related applications in the state. The centre is involved in the preparation of developmental plans for natural resources, environment and infrastructure in the state. It has already completed 75 projects sponsored by state and central government agencies related to developmental planning of the state. It has also published a number of reports and maps and created digital database related to natural resources, environment and infrastructure which would help in E-governance of the state. It is a major repository of digital spatial information in the state. The centre is equipped with the state-of-the-art infrastructure facilities for Geo-informatics. HARSAC has demonstrated application of Geoinformatics in the following areas:

1. Crop production forecasting
2. Cropping Systems Analysis
3. Forest and Tree Cover mapping
4. Wastelands and land degradation mapping
5. Ground water potential mapping
6. Mapping of quarrying and mining
7. Integrated Resources Survey and Management
8. Flood mapping and management
9. Agricultural Drought Monitoring
10. Wetland mapping

11. Watershed mapping and management
12. Land use/ Land Cover mapping
13. Computerization of Cadastral Maps
14. GIS Development for various departements
15. Urban Land use planning
16. Site Suitability Studies
17. Route Alignment for road, canal, drains etc.
18. GIS for Infrastructure Management
19. Consumer Indexing
20. Palae-channel mapping

Major Projects in the pipeline include:

1. Development of GIS database on natural resources and infrastructure of Haryana state
2. Digitization of Cadastral Maps of Haryana State.
3. Development of Vehicle navigation and Tracking system,
4. Creation of Haryana Spatial Data Infrastructure (HSDI)
5. Management of water logging and salinity in central Haryana using Geo-informatics
6. Watershed Evaluation in Different Parts of Haryana through Space Technology
7. Development of Ground water information system for Haryana
8. Certificate and Post Graduate Diploma courses in Geo-informatics

CRAPTC is now CPB

Centre for Research and Application in Plant Tissue Culture (CRAPTC) established jointly by the Department of Biotechnology, New Delhi and Haryana State Council for Science and Technology on March 1, 2000 has now been renamed as Centre for Plant Biotechnology (CPB), thereby widening the scope of its activities. Located on the premises of CCSHAU, Hisar, it has developed well-equipped Plant tissue culture laboratories and earned a name by multiplying elite germplasm of Guava, Aloe vera, Sargandha, Stevia, Banana, Gladiolous, Bamboo, Eucalyptus, Chlorophytum, Dahlia, Potato, Jojoba, Strawberry, Mehandi, Sugarcane and other species through tissue culture. The Department of Biotechnology, Govt. of India also declared this centre as "REGIONAL HARDENING FACILITY" during the 10th Five Year.

Thrust areas and mandate of CPB as decided by the Technical Advisory Committee now includes: Plant Tissue Culture, Plant Molecular Biology, Plant Transformation and Transgenics, DNA Testing and Diagnostics, Secondary Metabolite Research, Biotechnology and Tissue Culture Training and a Farmers Advisory Service.

Currently four projects worth about 1.72 crores sponsored by the DBT & DST, Govt. of India and DST, Haryana are going on at this Centre and 5 new projects worth approx. 1.5 crores have been sanctioned at the centre by DBT, NOVOD board, HSCST, etc.

CPB is on the march, progressing every single day, dedicated to the growers, industries and the people of the state with highest order of commitment.

Role of CPB in National Biofuel Mission

Demand for fossil fuel has grown several folds in the last decade and is certain to grow further and put additional pressure on the foreign exchequer. A major challenge for us in India is to counter this flat trajectory of growth in fuel demand. The known worldwide reserves of petroleum are 100 billion barrels and these are predicted to last about 40 years only, hence future availability of petroleum is uncertain. Biodiesel is a green, carbon-neutral fuel that can be produced in farms and has the potential of partially substituting mineral diesel if the national bio-diesel program is implemented properly. Jatropha curcas seeds

has been clearly identified to be an alternative to fossil fuels. Oils extracted from this plant can be converted to bio fuel after trans-esterification and provides fuel which causes lesser pollution and is environmentally safer. The Planning Commission, Government of India, through the Department of Science & Technology, New Delhi provided a grant of Rs. 88.35 lacs to CPB under bio-diesel mission for producing 4.5 lac superior quality Jatropha plants over a period of three years. CPB provided these plants to the farmers free of cost and also supported their cultivation by providing maintenance cost.

CPB organized national seminar on, "Physiological and Biotechnological Approaches to Improve Plant Productivity"

A national seminar on, "Physiological and Biotechnological Approaches to Improve Plant Productivity" was organized by the Centre for Plant Biotechnology, Hisar from 15th to 17th March, 2008.

The three days schedule of Seminar comprised of 4 plenary sessions, five technical sessions on seven different theme areas, a young scientist session and two poster sessions. The papers were received from several parts of the country including Punjab, Haryana, Bihar, Chandigarh (U.T.), Chhatisgarh, Delhi, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, Madhya Pradesh, Orissa, Tamil Nadu, U.P., West Bengal and also from U.S.A. and Canada.



Release of Abstract book during National Seminar

CPB is a part of National Bamboo Mission

Centre for Plant Biotechnology is a part of National Bamboo Mission and the Planning Commission, Government of India through the Department of Science & Technology, New Delhi provided a grant of Rs. 44.55 lacs to CPB under this mission for the production and planting of 70 hac. of in vitro raised high quality bamboo plants (Bambusa bamboos, Guadua angustifolia, Dendrocalamus

asper, Dendrocalamus hamiltonii). The Centre has provided these plants to the Forest Department, Haryana and Haryana State Land Reclamation and Development Corporation (HLRDC) free of cost and is also supporting their cultivation by providing maintenance cost for field demonstration trials at Yamunanagar.

J. J. Chinoy Award for Dr. A. K. Dhawan

Indian Society for Plant Physiology, New Delhi conferred its prestigious "J. J. Chinoy Award" for the year 2007 on Dr. A. K. Dhawan, Director (Technical), Centre for Plant Biotechnology, HSCST, Department of Science and Technology, Hisar. Dr. Dhawan was invited to Dapoli, Bombay to receive this award at the Annual Meeting and National Seminar of the Society on November 29, 2007.

This award is given to only one scientist each year for research contributions in Plant Sciences.

Incidentally, the Indian Botanical Society also awarded prestigious "Y. S. Murty Memorial Lecture Award" for the year 2007 to Dr. Dhawan at the University of Rajasthan, Jaipur on November 22, 2007.

Workshops/ Meets Organized

- i. Meeting on Space Technology for Developmental Planning of Haryana State under the Chairmanship of Hon'ble Chief Minister Haryana

A meeting on "Space Technology for Developmental Planning of Haryana" was held under the Chairmanship of Hon'ble Chief Minister Haryana on 24.10.2007 at 5.00 PM at Chandigarh. Deputy CM, all the Administrative Secretaries and Directors of the line departments were present in the meeting. Dr. J.S.Parihar, Deputy Director, Space Application Centre (SAC) Ahmedabad and Chief Scientist, HARSAC made presentations on various applications of space technology in the developmental planning of the state.

- ii. Two Days Orientation Program on EduSat Network :

HARSAC conducted a workshop in collaboration with Vigyan Prasar, DST on EduSat Network during 17th-18th March 2008 with the objective to know the basics of EduSat Satellite Communication systems. Coordinators from different SITs from MP, Gujarat, Rajasthan, Himachal Pradesh, Delhi, Noida, HARSAC participated in the two days workshop.

- iii. Meeting for taking up of projects of common use by HARSAC under the Chairmanship of Chief Secretary Haryana

As a follow up to the CM's meeting, a meeting for identification and taking up of projects of common use by HARSAC was held under the Chairmanship of Chief Secretary Haryana on 16.06.2008 at 3.00 PM at Chandigarh. Administrative Secretaries and HODs of various line departments were present in the meeting. Chief Scientist, HARSAC made a presentation on various applications of space technology in the developmental

planning of the state and identified seven major projects of use across the departments that can be taken up by HARSAC.

- iv. A meeting on the "Role of State Government in the proposed National Biotechnology Regulatory Authority" was held at Chandigarh on 24.6.08 in the conference hall of Department of Science and Technology under chairmanship of Shri Naresh Gulati, IAS, FC S&T. Dr A.K. Dhawan, Director (Technical), CPB, Hisar, and Dr Renu, Senior Scientific Officer-1, HSCST, Chandigarh co-ordinated and organized the meeting.

- v. Patent Information Centre at Centre for Plant Biotechnology, Hisar organized two workshops on, "Patent Awareness", one at University Institute of Engineering & Technology, Kurukshetra University, Kurukshetra on April 5, 2008 and another at National Dairy Research Institute, Karnal on October 16, 2008. About three hundred delegates attended these workshops.

- vi. A training program on "Plant Tissue Culture: Opportunities And Challenges" was organized at Centre For Plant Biotechnology Hisar during september 9-10, 2008. School and college teachers from different institutes across Haryana participated in the training



Patent Awareness Workshop at Kurukshetra University

Dr. A. K. Dhawan elected as Vice- President of ISPP

Dr. Ashok K. Dhawan, Director (Technical), Centre for Plant Biotechnology, Hisar has been elected as Vice- President of Indian Society for Plant Physiology (ISPP). The society has 710 life members and 80 annual members ; most of them are renowned scientists in the field of Plant Physiology. Dr. Dhawan has always relentlessly made

efforts to bring about an appreciation of the tremendous relevance of Plant Physiology to current scientific and industrial needs of the country and ensured that the subject of Plant Physiology assimilates in it other related areas of Plant Sciences and emerges out of its isolation.

Participation in International Conferences

1. Dr. A. K. Dhawan, Director (Technical) attended 2008 World Congress on Industrial Biotechnology and Bioprocessing at Chicago, USA, from April 27 to 30, 2008, where he delivered a lecture on "Micropropagation of *Jatropha curcus* and identification of markers for salt tolerance". Dr. Dhawan was an invited plenary speaker and panelist.

2. Dr. R. S. Hooda, Chief Scientist, HARSAC, Participated in the International Workshop on "Earth Observations and Remote Sensing Applications" held at Beijing, China from 30.06.08 to 02.07.08 and presented a paper entitled "Estimation of summer paddy in Haryana (India) using high resolution satellite data"

Children Science Congress

The Council in collaboration with Haryana Vigyan Manch, Rohtak organizes Children Science Congress every year in the state. The focal theme is decided by NTSTC. The theme for the year 2007-08 was "Biodiversity – Nurture Nature for

Future" on which the projects were prepared by students. Congress was organized in 12 districts of the state and State level Children Science Congress was organized among the winners at the district level.



Student participating in Children Science Congress



Projects displayed at Children Science Congress

National Science Day



Popular lecture being delivered during National Science Day

National Science Day is being celebrated by the Council on 28th February every year. Department of Science and Technology, GOI provides 75% financial support and rest is borne by the Council. For the year 2008 DST, GOI had selected the theme "Understanding Planet Earth". The National Science Day-2008 was celebrated in 24 school/colleges of the State. An amount of Rs 1,69,000/ was released to these schools/colleges for celebrating the Day. Various activities taken up by Schools/Colleges include thematic S & T exhibition, popular lecture, debate, competitions, etc.

Training & Awareness Activities

- i. Six Weeks Summer Training Program for PG students
Fifty two Post Graduate students from various universities, colleges and other institutions of the state were participated in the program conducted at HARSAC, Hisar from June 23 to August 6, 2008. The participants were exposed to the geo-informatic technologies through lectures, hands-on exercises, field surveys and small project work.
- ii. One-day space technology awareness program for School Children was conducted on August 12, 2008 at HARSAC. About 75 students and teachers from Government and Private Schools of Hisar participated in the program.
- iii. One week training program on space technology applications for school teachers was conducted at HARSAC from 20-24 October, 2008. About 25 science and geography teachers from various Government Schools of Haryana state participated in the program.
- iv. Three weeks training program on Remote Sensing and GIS for University/ college teachers and researchers was conducted from 24 November- 15 December, 2008 at HARSAC. Twenty Two teachers/ researchers from various universities/ colleges of Haryana participated in the program.
- v. Training program at CPB: With the mandate to create awareness about the benefits of tissue culture and other biotechnological techniques, CPB has initiated an ambitious tissue culture training programme. The centre has already imparted training to nearly 300 B.Sc, B.Tech, M.Sc and M.Tech students from various universities from all over the country and to school and college lecturers from different parts of the state.

Meetings/ Seminars attended

- Dr A.K. Dhawan, Director (Technical), Centre for Plant Biotechnology, Hisar and Dr Renu, Senior Scientific officer-1, HSCST, Chandigarh participated in meeting regarding the "Consultation with State Governments on proposed National Biotechnology Regulatory Authority (NBRA)" on May 15, 2008 at Ambassador Hotel, New Delhi. Meeting was held under chairmanship of Prof. M.S. Swaminathan. Senior representatives of 21 states/UTs participated in the consultation.
- Dr Renu, Senior Scientific Officer-1, Dr Alka, Technical Assistant and Mr R.C. Parkeek, Section Officer, HSCST, Chandigarh attended seminar on "Monitoring, implementation, evaluation and accounting of Government sponsored projects/schemes" on 23.4.2008 at CII, Sector 31, Chandigarh funded by DST, GOI and organized by Punjab State Council for Science and Technology.
- Dr. Manisha Mangal, Production Scientist, CPB attended Network workshop of Jatropa Biodiesel Mission held on 19.05.08 at NBRI.
- Dr. Manisha Mangal, Production Scientist and Dr. Rajwant Kalia, Senior Scientist, CPB attended first meeting of National Network on Seabuckthorn at DBT, New Delhi on 30.05.08.
- Dr Deepak Gupta, Chief Scientific Engineer, HSCST and Dr. Subhash Kajla, Senior Scientific officer-II, CPB attended Bangalore Bio-2007 (Exhibition and Conference).
- Dr. Subhash Kajla, Senior Scientific officer-II represented CPB in Science Exhibition held at Kalka.
- Dr. Subhash Kajla, Senior Scientific officer-II represented CPB in Chrysanthemum show organized by CCSHAU, Hisar in January 2008.
- Dr. Renu, SSO-1 & Co-Nodal Officer and Dr. Satish Mehta, Project Scientist, Patent Information Centre, Haryana participated in 11th All India, PIC's Interactive meeting at Mehsana, Gujarat on 17th to 18th, December, 2008.

Kalpana Chawala Memorial Planetarium

The prestigious Kalpana Chawala Memorial Planetarium has been constructed at Kurukshetra with the joint collaboration of Haryana State Council for Science & Technology (Deptt. of Science & Technology) and National Council of Science Museums (NCSM), Ministry of Culture, Govt. of India in the memory of Late Astronaut Ms. Kalpana Chawla at Kurukshetra near Jyotisar. It was inaugurated by Sh. Bhupinder Singh Hooda, Hon'ble Chief Minister, Haryana on 24th July 2007. The planetarium has been built at a cost of Rs. 6.50 Crores which was shared equally between Govt. of India & Govt. of Haryana on 5 acres of land provided by the State Govt. The Planetarium has a 12 metre dome with a seating capacity of 120 persons. The equipment installed in the planetarium is latest and has been imported from USA.

The Planetarium, named after the brave daughter of Haryana, has been developed for imparting non-formal education in Astronomy among the masses. The excellent programmes and the supporting exhibits placed inside and outdoor will help the people at large and students in



Kalpana Chawala Memorial Planetarium

particular in learning this frontier area of Science and satisfy their curious minds with a range of information about the universe. A programme titled "Oasis in the space" both in English & Hindi and another programme titled "A peak into Kalpana's dream and beyond" are available to be shown to the visitors.

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