

CSIR IN MEDIA



सीएसआईआर

CSIR

भारत का नवाचार इंजन

The Innovation Engine of India

NEWS BULLETIN

11 TO 15 JANUARY 2024



CSIR- NIScPR, UBA, VIBHA, DSIR and Jawaharlal Nehru RajkeeyaMahavidyalaya, Port Blair jointly organized Two day Workshop cum Training on “Making Value Added Products Using CSIR Technologies in Andaman Region”

CSIR-NIScPR, IHBT, CSMCRI, NIIST, IICT

14th January , 2023

CSIR-National Institute of Science Communication and Policy Research (NIScPR), in collaboration with Unnat Bharat Abhiyan (UBA), Vijnana Bharati (VIBHA), Department of Scientific and Industrial Research (DSIR), and Jawaharlal Nehru Rajkeeya Mahavidyalaya (JNRM) jointly organized a two-day Workshop cum Training on “Making Value Added Products Using CSIR Technologies in Andaman Region” at Jawaharlal Nehru Rajkeeya



Mahavidyalaya (JNRM), Port Blair, Andaman & Nicobar Islands from 11-12 January 2024.

The workshop aimed towards providing training and exposure to farmers and women self-help groups (SHGs) and aspiring entrepreneurs on CSIR Technologies like making value added products from Pandanus fruit using technology developed by CSIR-Institute of Himalayan Bioresource Technology (IHBT); Decentralized Solar Thermal Dryer for Hygienic Drying of Food Products developed by CSIR-Central Salt and Marine Chemicals Research Institute (CSMCRI), Dehumidified Dryer Technology by CSIR-NIIST Trivandrum and Managing Fungus Problems in Betel Nuts technology developed by CSIR-Institute of Himalayan Bioresource Technology (IHBT). The program also provided exposure to participants about CSIR AROMA & Floriculture Mission and various schemes of DSIR. They were also told about how to write effective project proposals for funding from Government Organizations like NABARD. Presentations were also made about various initiatives being undertaken under Unnat Bharata Abhiyan coordinated by IIT Delhi. In the concluding session Dr. Archana Singh, General Manager informed about the achievements of NABARD and its initiatives for rural development in various areas of Andamans & Nicobar islands.

The inaugural session was graced by Sh. Vikram Singh, (DANICS) Director of Agriculture and Fisheries, Andaman & Nicobar Islands, Dr. Hemant Kumar Sharma, Principal, Jawahar Lal Nehru Rajkeeya Mahavidalya. Prof. Ranjana Aggarwal, Director, CSIR-NIScPR, Dr Sujata Chaklanobis, Head A2K division DSIR, Prof. Vivek Kumar, National Co-Coordinator, UBA, IIT Delhi, Shree Shreeprasad, VIBHA also addressed the gathering.

The event witnessed an over whelming participation of more than 90 locals participants. The participation was dominated by young women aspiring entrepreneurs, SHGs, FPOs etc. The event commenced with a welcome address by DrKandimuthu, Local coordinator of UBA, Port Blair. The audience was briefed by Dr Yogesh Suman, Chief Scientist, CSIR-NIScPR. He discussed about the importance of the efforts being made jointly by these organization to create livelihood in rural areas by using CSIR technologies. He briefly informed the audience about the technologies identified to address the concerns of locals of Andaman region. Dr Hemant Kumar Sharma, Principal, JNRM appreciated the efforts taken by CSIR which will help to create livelihood opportunities in their region.

Prof. Ranjana Aggarwal, Director, CSIR-NIScPR joined the event online and briefed the audience about the mandate & vision of CSIR-NIScPR. She highlighted various technologies developed by CSIR which are suitable for rural livelihood generation. She also mentioned how at grassroot level CSIR can help Science to connect with society. The gathering was later address by Prof. Vivek Kumar, National Co-coordinator, UBA. He explained about the UBA & how it is progressing towards creating AtmaNirbhar Bharat.

Dr Sujata Chaklonabis, Advisor and Head, A2K Programme, DSIR discussed about various schemes of DSIR relevant to rural development. Shri SreeprasadMK, VIBHA discussed about the contribution of VIBHA in rural development and shared his experience in Andaman and Nicobar. Dr. Nagesh Ram, Senior Scientist and Head, ICAR (retd.) asserted that the fish product oriented technologies would be helpful for the development Andaman region. Dr Shiv Narayan Nishad, Senior Scientist, CSIR-NIScPR delivered the vote of thanks and Ms MeetaliBharati anchored the sessions. .

In the technical session, Dr. Mahesh Gupta, Principal Scientist, CSIR-IHBT, discussed in detail about the value added products that could be made from Pandanus fruits. He mentioned that the Pandanus fruit, which is a natural produce in Andaman region, has multiple value added products. He described the nutritional facts of the value added products..

Dr. Subarna Maiti, Senior Principal Scientist, CSMCRI, talked about decentralized applications of solar thermal energy for livelihood expansion & sustainability. She emphasized that their technology preserves seasonal surpluses of fruits and vegetables, also enables selling dried commodities at higher quality and fetching better prices. Dr. Bhupendra Kumar Markam, Senior Scientist, CSIR-CSMCRI briefed the audience about demonstrations of CSIR-CSMCRI solar thermal dryers for fish drying at Gogha fishing village and Talaja, Gujarat and on field on-field demonstration at Guwahati- under funding from the North-East Centre For Technology Application & Reach (NECTAR).

Dr. K. Suresh Babu, Senior Principal Scientist, CSIR- IICT, mentioned in detail about medicinal flora used by indigenous tribes of Andaman and Nicobar Islands for their therapeutic potentials. He briefed the audience with different applications of natural products and why herbal/natural products should be used.

Day two of the event began with the technical session by Dr. V. Venugopalan, Chief Scientist, CSIR-NIIST. He elaborated on the R & D highlights of CSIR-NIIST in agro processing. He introduced the audience with the dehumidifier drier for food/agro technology. This technology involves low temperature and uniform drying/heating of the fruit/vegetables ensuring retention of micronutrients and also it is energy efficient.

Dr. D. Shailaja, Chief Scientist, CSIR-IICT discussed about social entrepreneurship and dissemination of technologies at grass root level. She briefed the audience about various technologies that they have successfully disseminated at grassroots level like generic drugs, value addition of degradable household and municipal waste, Cascaded membrane and resin filter for production of demineralized water, indigenous atmospheric water generator suitable

for islands, sustainable agriculture etc. Dr. M. P. Darokar, Chief Scientist, Technology Management Directorate, CSIR gave an overview of CSIR-AROMA and floriculture mission for uplifting lives through S & T interventions. He briefly addressed the audience with the uses of aroma oils and how its market is expanding in India.

Dr. Vipin Shukla, Scientist-G, DSIR elaborated on how to formulate a good project proposal and gave an overview of DSIR schemes and initiatives for upliftment of people in rural areas.

Dr. Vinayak, Principal Scientist, CSIR-NIScPR introduced the audience with the KISAN SabhaMobile App.

For the valedictory session, Smt. Archana Singh, General Manager, NABARD highlighted the Growth and expansion of SHGs. She acknowledged the efforts of CSIR, UBA, DSIR and JNRM for successfully organizing the two day training program. The knowledge gained during this training program will definitely help the participants to become an entrepreneur.

The event concluded with the distribution of certificates of participation and the final remarks were given by Dr. Hemant Kumar Sharma.

Call for Nominations announced under Rashtriya Vigyan Puraskar 2024 in the field of Science, Technology, and Innovation

CSIR

14th January , 2023

The Government of India has announced the “Rastriya Vigyan Puraskar” in the field of Science, Technology and Innovation. The National Award recognizes outstanding and inspiring scientific, technological and innovation contributions of researchers, technologist and innovators. Nominations /Applications are invited for the Rashtriya Vigyan Puraskar (RVP) for individuals or in teams in various fields of science, technology and technology led innovation.



The awards shall be given in following four categories:

Vigyan Ratna (VR): Maximum of three awards to be bestowed to recognize life time achievements & contributions made in given field of Science and Technology.

Vigyan Shri (VS): Maximum of 25 awards to be given to recognize the distinguished contributions in given field of Science and Technology.

Vigyan Yuva: Shanti Swarup Bhatnagar (VY-SSB) award: Maximum of 25 awards to be given to recognize and encourage young scientists who made an exceptional contribution in given field of Science and Technology.

Vigyan Team (VT) award: Maximum of three awards may be awarded to a team comprising of three or more scientists/researchers/innovators who have made an exceptional contribution working in a team in given field of Science and Technology.

The Rashtriya Vigyan Puraskar shall be given in the following 13 domains, namely: Physics, Chemistry, Biological Sciences, Mathematics & Computer Science, Earth Science, Medicine, Engineering Sciences, Agricultural Science, Environmental Science, Technology &

Innovation, Atomic Energy, Space Science and Technology, and Others. The nominations for this bouquet of awards are invited on Award Portal of Ministry of Home Affairs (<https://awards.gov.in/>) from 14th January 2024 to 28th February 2024. The general guidelines and RVP details are available on the awards portal. The awards this year are being coordinated by Council of Scientific and Industrial Research (CSIR) under the Ministry of Science and Technology.

The awards shall be announced on 11th May 2024 (National Technology Day). The Award Ceremony for all categories of awards will be held on 23rd August 2024 (National Space Day).

IISF 2023 presents Vigyanika, the science literature festival

CSIR-NIScPR

14th January, 2023

The India International Science Festival, IISF 2023 presents Vigyanika- science literature festival with the primary objective of showcasing India's scientific prowess and charting a comprehensive roadmap for effective communication of S&T achievements. The event is going to be held at the Regional Centre for Biotechnology (RCB) – Translational Health Science and Technology Institute (THSTI) campus, Faridabad, Haryana, on 18th and 19th January, 2024. CSIR-National Institute of Science Communication and Policy Research (NIScPR), National Innovation Foundation-India (NIF), and Vijnana Bharati (VIBHA) are the coordinating organisations.

The planned sessions on 18th January 2024 include a scientific session on the theme “Science and Technology Public Outreach in India.” Prof B N Jagatap, Senior Professor, IIT Bombay will chair the session. The experts include Dr. Dinakar M. Salunke, Former Director, International Centre for Genetic Engineering and Biotechnology (ICGEB), Prof KC Bansal, Former Director, National Bureau of Plant Genetic Resources (NBPGR); and Prof (Dr) Uma Kumar, All India Institute of Medical Science (AIIMS), New Delhi.

A panel discussion will take place on the theme “Apni Bhasha Apna Vigyan: Strengthening Sci Comm in Indian Languages.” Shri Chamu Krishna Shastry, Padma Shri, Chairman- Bharatiya Bhasha Samiti will chair the session. Science communicators in Hindi, Punjabi, Manipuri, Tamil, Assamese, and Malayalam will share their thoughts.

A workshop on popular science writing is also planned which will be conducted by Shri Hasan Jawaid Khan, Former chief scientist, CSIR-NIScPR, and Dr HS Sudhira, a leading science communicator. A scientific session with the theme “Science Communication in India: Current Trends, Opportunities and Challenges” has been planned where selected participants will present their papers. Dr PK Joshi from Homi Bhabha Centre for Science Education (HBCSE)

will chair the session. Next in line is the cultural programme with a confluence of arts and science. This will include a science drama.

The first session on Day 2 (19th January 2024) is a panel discussion on the theme “Creative Science Communication through Films, Podcasts & Social Media - Amplifying the Reach.” A drawing and quiz competition for school students is also planned.

The other panel discussion on the same day is on the theme “Challenges in Traditional Knowledge Research & Communication.” Prof Vasant Shinde, Former VC, Deccan College will chair the session. A Vigyan Kavi Sammelan is also planned which will be chaired by Dr Madhu Pant, Former Director, National Bal Bhawan.

A special session on “Science communication for Vasudhaiva Kutumbakam” followed by the valedictory session is planned for the evening. Internationally-acclaimed author Mr. Marc Prensky and Dr Sharmila Binti Md. Salleh, Chief Executive Officer at Yayasan Inovasi Malaysia (YIM) are expected to attend the session.

Dr Paramananda Barman & Dr Monika Jaggi from CSIR-NIScPR, Dr Nitin Maurya & Rahul Prakash from NIF and Dr Madhav Govind & Dr Neel Sarovar Bhavesh from Vibha are the coordinators of Vigyanika 2023.

The Science Media Communication Cell (SMCC) at CSIR-National Institute of Science Communication & Policy Research (NIScPR) is coordinating and facilitating the media publicity of the India International Science Festival (IISF) 2023. The key objective of the SMCC is to disseminate and showcase R&D breakthroughs and scientific achievements of India on various platforms of media.

CSIR-CRRI's Steel Slag Road Technology is paving the way to build stronger and eco-friendly national highways in the country: Dr. V.K. Saraswat

CSIR-CRRI

13th January , 2023



Dr. V.K. Saraswat, Member (S&T), NITI AAYOG inaugurated India's First National Highway Steel Slag Road section on NH- 66 Mumbai-Goa National Highway today. Dr Saraswat said that the Steel Slag Road Technology, developed by CSIR-Central Road Research Institute (CSIR-CRRI) is transforming the waste of steel industries into wealth and is helping the National Highways Authority of India (NHAI) to build stronger and ecofriendly national highways in the country.

JSW Steel, under the CSIR-CRRI technological guidance, has constructed the 1 km long four lane steel slag road section on Indapur-Panvel Section of NH-66 Mumbai-Goa. For construction of this road around 80,000 tons of CONARC Steel slag were converted as processed steel slag aggregates at JSW Steel Dolvi, Raigad plant. The processed steel slag aggregates are superior to natural aggregates in terms of various mechanical properties and utilized for steel slag road construction in all layers of the road in place of natural aggregates. The road has bituminous and cement concrete steel slag road section at same location in RHS and LHS carriageways. On this road section, the processed steel slag aggregates and slag cement have been utilized for construction of the cement concrete road in all layers.

Shri G S Rathore, Chief Operating Officer, JSW Steel Ltd appreciated the efforts put in by CSIR-CRRI and the support JSW Steel Ltd received from NHAI in making this project a success.

Dr. Manoranjan Parida, Director, CSIR-CRRI said that CSIR-CRRI, under a sponsored research project of Ministry of Steel, is developing national guidelines for utilization of processed steel slag in steel slag road construction. He further added that CSIR-CRRI in collaboration with different steel industries has successfully utilized steel slag in road construction at Gujarat, Jharkhand and Arunachal Pradesh.

NHAI Regional Officer, Mumbai and Chief General Manager, Shri Anshumali Srivastava stated that the steel slag road section is known for its novel technological features and exceptional performance, and garnered appreciation from the National Highways Authority of India (NHAI). Shri Satish Pandey, Principal Scientist CSIR-CRRI and Project Leader of the Steel Slag Road project informed that the bituminous steel slag road on NH-66 is built with 28% less thickness in comparison to conventional bituminous road on NH-66 and while cement concrete section is built at identical thickness. Both the road sections i.e. bituminous and cement concrete are around 32% economical in comparison to conventional roads and found to have better durability.

Two-day Kisan Mela To Be Organized In CIMAP Lucknow On January 30-31

CSIR-CIMAP

13th January, 2023

CSIR-Central Institute of Medicinal and Aromatic Plants (CSIR-CIMAP) is one of the premier research institutes in the country. The institute is functioning under the Ministry of Science and Technology, Government of India. The institute has been engaged in research and development and technology dissemination in the field of medicinal and aromatic plants for the last about 65 years.

To increase the income of farmers qualitatively, the institute is constantly developing new technologies and developing and conserving medicinal and aromatic plant species. CSIR-CIMAP has developed more than 150 improved varieties of medicinal and aromatic plants and their agronomic and processing technologies. To make these improved varieties and agricultural and processing techniques easily accessible to the farmers, a medium was created which is called Kisan Mela.

This Kisan Mela was started by CSIR-CIMAP in the year 2003. This Kisan Mela is a great platform for the farmers of the country interested in the cultivation of medicinal and aromatic plants. More than 75000 participants from different states of the country have participated in 19 Kisan Melas organized so far. As a result, millions of farmers and entrepreneurs in the country are benefiting from the cultivation and processing process of medicinal and aromatic plants and their standard of living is improving.

Demonstrations of soil testing, Drone Technologies, stalls of various CSIR institutes and demonstration of technologies and various techniques related to CSIR rural development have been planned. Farmers from around 25 states are expected to participate this year.

The institute is also successfully leading the CSIR-run National Aroma Mission. India has made its mark in the world due to the high-level research and development work done by this

institute in the field of mentha and lemongrass. Menthol has become the largest producer and exporter of mint and citrus essential oils. At present, Uttar Pradesh contributes about 75-80% of the production of mentha oil at the national level.

A two-day Kisan Mela is being organized by CSIR-Central Institute of Medicinal and Aromatic Plants (CSIR-CIMAP) on January 30-31, 2024 at the campus in Lucknow. About 5000 farmers and entrepreneurs from different states of the country such as Uttar Pradesh, Bihar, Punjab, Haryana, Madhya Pradesh, Gujarat, Rajasthan, Jharkhand, Chhattisgarh, Tamil Nadu and other states are expected to participate in this fair. This time the theme of the Kisan Mela will be based on women's empowerment.

The two-day Kisan Mela will also include a seminar on "Production to Market" on medicinal and aromatic plants, in which scientists, farmers and buyers will have mutual discussions, as well as demonstration and sale of improved plant material, publications and herbal products, and live demonstration of distillation/processing and vermicompost manufacturing and the making of incense sticks and rose water for women.

CSIR-IHBT Palampur team visited Mizoram to promote cultivation of mushrooms, high-value aromatic crops, and low-chilling varieties of apples

CSIR-IHBT

13th January , 2023

Some suitable areas of Mizoram have high-value aromatic crops potential. To help the farming community by planting shiitake and oyster mushrooms and low-chilling varieties of apple. To improve the economy of Mizoram, Mizoram Science Technology and Innovation Council (MISTIC), Aizawl, Mizoram, and College of Horticulture, Thenzol is doing it in collaboration with CSIR IHBT, Palampur.



Dr. Sudesh Kumar Yadav, Director, CSIR-IHBT, Palampur said that the Department of Biotechnology, Government of India has awarded the Institute three projects for inter-institutional collaboration, and approval was given under this initiative of project Shiitake and Oyster. To promote the cultivation of mushrooms, high-value aromatic crops, and low-chilling varieties of apples and the development of sustainable use of biological resources of Mizoram approval has been granted.

For this, the CSIR-IHBT team visited Mizoram from 7-10 January 2024. They did training at the College of Horticulture, Thenzawl, and various places in Mizoram Many Programs were also organized. Dr. Rakesh, Senior Principal Scientist, CSIR-IHBT Kumar and Principal Scientist E. Mohit Sharma from Horticulture College, Thenzawl, Mizoram, and Dr. Dewi Lalruatlina, Senior Scientific Officer of MISTIC visited various project sites to review aromatic crop projects.

The team interacted with local apple farmers in Khanpui village of Aizawl district and Pruning techniques, nutrient management, irrigation basins, and pits required for the

cultivation of Meticulous construction were highlighted. At various places in Mizoram, pilots were conducted. There are plans to bring about 20 acres of area under low-chilling apple varieties. The objective of the initiative is to provide farmers with the latest knowledge required for successful apple cultivation.

The team participated in the event on January 9, 2024, with scientists, and students. There was also a training session on the cultivation and processing technology of aromatic plants for farmers and employees. Organized training program. A process of essential oil extraction from lemongrass and citronella, a practical demonstration was also given to the trainees.

Dr. Rakesh Kumar said that aromatic plants obtain essential oils that are traded in the perfume, flavor, pharmaceutical, and pesticide industries in international markets. Scientists of CSIR-IHBT and Chief Scientist of MISTIC discussed the Progress of Projects between Officer and Member Secretary, Shri ER H Lalsawaliyana A meeting was also organized to discuss and monitor further plans. The team met Mr. PUCC Lalchuangkima, Chief Executive Officer, of Aizawl Smart City.

The discussion of the meeting focused on aromatic plants and low-chilling varieties of apples, which would promote progress in agricultural innovation and sustainable development. These joint initiatives aim to bridge the gap between scientific knowledge and practical implementation.

The unwavering commitment of CSIR-IHBT and MISTIC aims to empower local farmers and transform Mizoram into sustainable agriculture. It will also motivate them to adopt the methods.

Published in:

[Himachalheadlines](https://www.himachalheadlines.com)

CSIR Floriculture Mission workshop concludes

CSIR-IIIM

13th January, 2023

A five day workshop on 'Value Addition of Floricultural Crops for Skill Development and Entrepreneurship' under CSIR Floriculture Mission concluded at CSIR-IIIM, Branch Srinagar under the patronage of Dr Zabeer Ahmed, Director, CSIR-IIIM and Er. Abdul Rahim, Head CSIR-IIIM Srinagar. A statement said that 75 participants from self help groups of JKRLM, floriculture technocrats, and aspiring entrepreneurs were imparted hands-on training on various aspects of value addition of flowers like Dry Floral Technology, Floral Arrangements like bouquets, box bouquet making and table arrangements, Floral Resin Art, Flower Pressing, Floral Jewellery Making and Flower Press Printing. Apart from the hands-on training, the participants during the workshop were actively involved in the project-making cum competition in the said categories and winners and runner-ups were also adjudged by an expert jury. Exhibits of the various floral specimens made by the participants in each category were also showcased.

The valedictory session of the workshop was attended by Dr Imtiyaz T Nazki, Head, Floriculture and Landscaping, SKUAST-K, Dr Nasheeman Ashraf, Principal Scientist, CSIR IIIM, Dr Shahid Rasool, Nodal Scientist, CSIR Floriculture Mission, Farooq Ahmad Mir, Prominent Floriculturist, Nasir Ali Khan, Radio Personality and Social Media Influencer and District Programme Managers of JKRLM of Srinagar, Pulwama and Budgam. Nasir Ali Khan, while speaking at the event commended the organisers for conceiving a unique workshop wherein the utilization of flowers can be imagined beyond their traditional use. He also gave a detailed presentation on the use and importance of social media as a powerful tool for enterprise promotion. He made the participants familiar with approaches to leveraging social media to help them better understand the algorithm of search engines.

Published in:

Greaterkashmir

Trapping & analyzing viruses in waterbodies turn seamless with Neeri's cartridge technology

CSIR-NEERI

12th January, 2023

CSIR-NEERI has simplified the process of analyzing viruses in water bodies by developing a novel on-field bacteriophage/virus concentration device that cuts the water sample size 100 times and improves its quality for better study.

The cartridge, modelled on affinity technology, promises to be a game changer in river studies and aid global researchers interested in waterbody analysis.

CSIR-NEERI's environmental virology cell felt the need for this portable device during the Namami Ganga project when they had to move huge volumes of water samples from the site to its laboratory in Nagpur. The NEERI scientists spent 10 years studying the river's self-cleansing properties. Researchers found the exercise time consuming besides posing manpower and logistical challenges. The team encountered several challenges from Gaumukh to Gangasagar such as tough terrain and mammoth length of the river. They had to collect at least nine water samples from the left bank, right bank and middle of the river including the upstream and downstream of the selected site. Each sampling for virological study required collection of 5 litres of water which makes it at least 45 litres per site. "Besides collecting water samples from approximately 150 Ganga sites, the NEERI team also had to gather sediments," said Dr Krishna Khairnar, scientist and head of environmental virology cell, Neeri.

The whole exercise posed logistical challenges beside increasing the cost and manpower requirement. As a consequence, the Neeri team deliberated over a technology that can ease their task by carrying out the study on site. "The lab developed a cartridge that traps viruses when water is passed through it. Such onsite processing is possible due to portability of the device which is gravity driven; the river water when passed through the device traps the bacteriophage/viruses. The cartridge is taken to the lab where a elution buffer releases the trapped viruses for study," Dr Khairnar said.

The disposable (only one time use) cartridge is hardly 4 to 5 inches in length and weighs 50gm. The viruses which were studied earlier in 5,000 ml of water can now be concentrated to 50ml by passing the large volumes through this device. “This leads to good chances of identifying the viruses, especially bacteriophages. The cartridge’s matrix works on the principle of holding back bacterial viruses which are released when treated with a buffer solution in the lab,” he said.

Principal innovator Dr Krishna Khairnar and his co-innovators — Gaurav Ghugare and Priyanka Sarode — recently got a patent for the product. This work was filed in 2018 and was granted a patent by end of 2023.

“The problem with environmental samples is that volume is large and the dilution factor causes several limitations. In clinical samples like blood or throat swab, the microbiological agents like viruses are in much concentrated form. That is not the case with water,” said Dr Khairnar. “The patenting has now secured the IP, we look forward to commercializing the innovation so that the production of the device can be scaled up.”

स्वाद के साथ अब कुपोषण भी दूर करेगी चॉकलेट, सीएसआईआर-आईएचबीटी ने की तैयार

CSIR-IHBT

12th January, 2023

स्वाद के साथ अब चॉकलेट बच्चों का कुपोषण दूर करेगी। पहले जिला कांगड़ा और फिर प्रदेशभर में कुपोषण को खत्म करने के लिए यह चॉकलेट बार मददगार साबित होंगे। हर दिन अलग-अलग प्रकार की चॉकलेट 2 से 5 साल के कुपोषित बच्चों को दी जाएंगी। इसमें प्रोटीन, फैट, आयरन, फाइबर, कार्बोहाइड्रेट की भरपूर मात्रा होगी, जो कुपोषित बच्चों को स्वस्थ और तंदुरुस्त बनाने में मदद करते हैं। इसके अलावा बच्चों में खाना खाने की रुचि भी बढ़ेगी।

सीएसआईआर-आईएचबीटी पालमपुर (हिमालयन जैव संपदा प्रौद्योगिकी संस्थान) ने कुपोषित बच्चों के लिए छह प्रकार के चॉकलेट बार तैयार किए हैं। हर दिन अलग-अलग प्रकार के चॉकलेट बार कुपोषित बच्चों को पौष्टिक तत्व प्रदान करेगा। जानकारी के अनुसार महिला एवं बाल विकास विभाग और जिला कांगड़ा प्रशासन के सहयोग से फरवरी में जिला कांगड़ा में पायलट प्रोजेक्ट चलाया जाएगा। 'भरपूर' योजना के तहत जिला के हर उपमंडल के आंगनबाड़ी केंद्रों में कुपोषित बच्चों को यह चॉकलेट बार दिए जाएंगे।

इसके बाद यह योजना प्रदेशभर में चलाई जाएगी। मौजूदा समय में कांगड़ा में विभिन्न उपमंडलों के तहत 914 कुपोषित बच्चे हैं, जिसमें से 151 अति कुपोषित और 763 कम कुपोषित बच्चे हैं। अगले माह से इन सभी बच्चों को रोजाना अलग-अलग प्रकार के पौष्टिक चॉकलेट दिए जाएंगे। कुपोषित बच्चों को आंगनबाड़ी केंद्रों में दलिया, बिस्कुट आदि दिए जाते हैं। कई बच्चे इन्हें खाने से परहेज ही करते हैं, जिस वजह से बच्चों को जरूरी पौष्टिक तत्व नहीं मिल पाते हैं।

चॉकलेट के नाम और विशेषताएं

स्पिरुलीना पीनट बार : 20 ग्राम से अधिक वजन के इलायची फ्लेवर वाली इस चॉकलेट में प्रोटीन, फैट और आयरन मिलेगा।

मल्टीग्रेन प्रोटीन मिक्स : 30 ग्राम वाले इलायची और वनीला फ्लेवर वाले इस पाउडर में प्रोटीन, कार्बोहाइड्रेट और आयरन पर्याप्त मात्रा में होगा। इस पाउडर को बच्चे दूध में घोलकर पी सकते हैं।

प्रोटीन एंड फाइबर एनरिच एनर्जी बार: 20 ग्राम से अधिक वजन वाले वाले इस बार में चॉकलेट

और फलों का फ्लेवर होगा और इसमें प्रोटीन, फैट और आयरन की भरपूर मात्रा होगी।
प्रोटीन एनरिच पीनट बटर बार: 20 ग्राम से अधिक वजन वाले इस बार में मूंगफली और चॉकलेट के स्वाद के साथ प्रोटीन, फैट और आयरन होगा।
आयरन एनरिच फ्रूट बार: 20 ग्राम से अधिक वजन वाले इस चॉकलेट बार में फलों और मसालों के फ्लेवर के साथ प्रोटीन, फैट और आयरन की भरपूर मात्रा होगी।
प्रोटीन एंड फाइबर एनरिच मिल्लेट कुकीज: अनाज और इलायची वाले फ्लेवर के बिस्किट में प्रोटीन, फाइबर और आयरन की भरपूर मात्रा होगी।

जिला कांगड़ा में फरवरी से कुपोषित बच्चों के लिए पौष्टिक चॉकलेट दिए जाएंगे। इससे जिला कांगड़ा में कुपोषित बच्चों को सेहतमंद और तंदरुस्त बनाने में मदद मिलेगी। कांगड़ा में इसे 'भरपूर' नाम के पायलट प्रोजेक्ट के तौर पर शुरू किया जाएगा। सीएसआईआर-आईएचबीटी पालमपुर के विशेषज्ञों ने छह प्रकार के चॉकलेट बार को तैयार किया है।-डॉ. निपुण जिंदल, उपायुक्त कांगड़ा।

Tiger samples sent to CCMB and Meat Institute

CSIR-CCMB

12th January, 2023

The Forest department has sent viscera samples of the tigress and tiger that were found dead at Daregaon in Kaghaznagar for examination to different institutes in the city and are awaiting the reports.

In the case of the tigress, hair and other samples were sent to the Centre for Cellular and Molecular Biology (CCMB) to determine the cause of death. The tigress was found dead by forest staff on January 6. Though officials said after initial investigation that it could have been killed in a territorial fight with another tiger, they have sent the hair samples found in the mouth of the tigress for further investigation to CCMB.

Similarly, the viscera samples of the male tiger, which was found dead on January 8, was sent to the Meat Research Institute for further investigation. Preliminary observations by the officials said the tiger could have died due to poisoning. After the toxicology report is furnished to the department, all the details of chemicals, toxins or poisons used can be known. Generally, it takes about two weeks for these reports to be compiled and furnished to the department, a senior official from the forest department said.

Tiger deaths more in Kawal than in Amrabad reserve

Kawal and Amrabad Tiger Reserves are the two prominent reserves in the State. However, more tiger deaths are reported from Kawal Tiger Reserve (KTR) than Amrabad Tiger Reserve (ATR) for varied reasons.

Unlike ATR, which has more hilly terrain, KTR has vast plain lands. People cultivate lands in many areas under the KTR limits and there are habitations in the core as well. During migration, tigers tend to attack the cattle near agriculture fields and this does not go well with the local people, said an official. Compared to KTR, the extent of area under cultivation by people in the ATR jurisdiction is lesser and is limited to a few areas. Though, a few Chenchus live in the core

area of ATR, they do not take up cultivation extensively. Wild animals move across the River Krishna easily to get into the Andhra Pradesh limits from ATR, the official explained. NTCA recommendations to ATR and KTR

The National Tiger Conservation Authority's Management Effectiveness Evaluation (MEE) team, which inspected both ATR and KTR in November, 2022, had made some recommendations to the Telangana Forest department for effective conservation measures.

Among a few recommendations, the MEE team had suggested setting up a Special Tiger Protection Force (STPF) in both ATR and KTR with 112 staff in each unit as was being done in Maharashtra.

The team also wanted the Forest department to explore possibility of increasing number of base camps in the two Tiger Reserves in view of the vast areas covered by the reserves. This apart, the team had specifically suggested closure of one Beedi leaf unit in KTR to reduce pressure on the habitat.

Though measures were initiated for closure of the beedi leaf unit and relocating villagers from the core areas of KTR, the setting up STPF was not financially feasible, officials said.

To begin with, the union government allots some funds for setting up the STPFs but to sustain them on an annual basis was a financial burden on the department. STPFs maintenance include, salaries to the staff, arms and ammunition, vehicles fuel and repairs etc, said the official. "Save for a few States like Maharashtra and other States, most do not evince interest in STPFs, citing financial implications" he said.

Jammu CSIR lab finds cannabis plant compound has antibiotic effects | Explained

CSIR-IIIM, NCL

11th January , 2023

Scientists at CSIR-Indian Institute of Integrative Medicine (IIIM), Jammu, have found that phytocannabinoids, a class of compounds found in the cannabis plant, possess some hitherto unexplored antibiotic properties. Antimicrobial resistance (AMR) is a major health concern worldwide. It refers to when bacteria, viruses, fungi, and parasites no longer respond to medicines used to treat them.



According to Sanghapal D. Sawant, a senior principal scientist at the CSIR-National Chemical Laboratory (NCL), Pune, bacteria have developed certain sophisticated ‘shields’ over many decades to resist the effects of antibiotic medications.

These include the formation of biofilms – thin sheets of bacterial colonies that are more resistant to antibiotics than when separated – and cellular mechanisms called efflux pumps that flush drugs out from cells. The resulting AMR increases the risk of disease spread, severe illness, and death.

What is India’s AMR burden?

According to one estimate, India reported 2.97 lakh deaths in 2019 that could be attributed to AMR and 10.42 lakh others that could be associated with AMR. Reports have also flagged the overuse of antibiotics in India, their misuse in animal husbandry, and poor waste disposal for engendering AMR and potentially rendering India the “AMR capital of the world”. For these reasons, medical researchers are keen to tamp down AMR and find new drugs that fight AMR pathogens. In the new study, published in the journal ACS Infectious Diseases, IIIM

researchers tested the antibacterial properties of tetrahydrocannabinidiol (THCBD), a semisynthetic phytocannabinoid, against *Staphylococcus aureus*, the bacteria responsible for the second most number of deaths due to AMR worldwide.

Need for 'alternative solutions'

Antibiotics are chemical compounds isolated from one microorganism and used to kill another. They have saved millions of lives since their discovery but are falling short against AMR bacteria.

“*S. aureus* includes a strain known as MRSA, for methicillin-resistant *S. aureus*, resistant to the last line of antibiotics called methicillin,” Parvinder Pal Singh, principal scientist at IIM researcher and the study’s corresponding author, said. “While numerous antibiotics exist for *S. aureus*, the emergence of the MRSA strain necessitates alternative solutions.” The study revealed THCBD obtained from cannabis could fight MRSA. “We tested this molecule on eight to ten different resistant strains of *S. aureus*, indicating its potential through a distinct mechanism, and offering a promising avenue for further investigation.”

How is THCBD made?

Cannabinoids are a class of compounds found in the cannabis plant. The prefix ‘phyto’ in phytocannabinoid means it comes from a plant. Cannabinoids bind to receptors in the bodies of animals to produce a variety of neurological effects.

The researchers extracted cannabidiol from a cannabis plant and made it react with hydrogen, using palladium as a catalyst. This process yielded a mixture of molecules with the same composition and order of atoms but different structures. One of them was THCBD.

What were THCBD’s effects?

Then the researchers tested THCBD against bacterial cultures in the lab. The minimum quantity found to be efficacious against a strain of Gram-positive *S. aureus* used commonly in AMR research was found to be 0.25 µg/ml, which the researchers called “potent”.

They found THCBD “demonstrated strong effectiveness” against efflux pump overexpression and MRSA strains. They also wrote THCBD “significantly reduced” the number of viable microbial cells of *S. aureus* skin infections in mice.

Finally, they found that the compound either complemented or was indifferent to the effects of other common antibiotics like mupirocin, penicillin G, and ciprofloxacin, meaning they could be used together. “While we have identified a promising candidate, the journey to transforming it into a viable drug involves overcoming additional hurdles,” Dr Singh said. “The establishment of a comprehensive safety profile is a crucial step that remains to be seen. Moving forward, our focus will include addressing these issues to develop an improved and safer molecule for potential drug applications.”

Is THCBD well-studied?

Nonetheless, Showkat Rashid, a senior scientist at the Medicinal Chemistry Division of IIIM, called the study “very exciting” and “thought-provoking”. “On one hand, it is well aligned towards the development of new therapeutics against AMR and on the other, it brings the less explored but highly potent phytocannabinoids into the fold” of AMR research.

The main reason it wasn't in the fold already? THCBD comes from cannabis, which is notorious for its intoxicating properties. As a result it hasn't been easy to collaborate on phytocannabinoid research with other institutes. Dr Sawant said research related to cannabis comes up against legal constraints and the need to adhere to specific regulations when studying this plant.

For example, Section 20 of the Narcotic Drugs and Psychotropic Substances Act 1985 restricts the use of cannabis and doesn't make exceptions for research. “The pioneering cannabis research project aims to catalyse policy transition at a national level by advocating for a unified national policy for cannabis research,” said Zabeer Ahmed, director of CSIR-IIIM Jammu. “By highlighting the anti-bacterial nature of cannabis, the project will go a long way towards circumventing the taboo around it, and transform it into a valuable resource.”

What next for THCBD?

Pankaj Singh Cham, lead author of the study, said the group is “eager to explore collaborations to speed up our progress.”

“Establishing a framework and transportation agreement is important. Currently, many universities lack approval to conduct research on the plant, and efforts are underway to secure government authorisation,” he added.

“The study recently published by Dr Singh’s research group ... has presented a unique set of molecules that could be a game-changer in tackling AMR-related problems,” Dr Sawant said. “It is found to have the ability to be a good preclinical candidate, which needs further fine-tuning as far as its drug likeness is concerned.”

He added that addressing the solubility challenge of THCBD could be a “viable strategy”, in addition to conducting a comprehensive safety profile assessment, to pave the way for its use as a drug.

What is the solubility challenge?

Solubility is an important consideration for a drug. For example, many antibiotics are administered orally. Before their active ingredients can be absorbed at a specific site in the body, the drug will need to dissolve in an aqueous solution. If it doesn’t dissolve properly, the body won’t be able to absorb it as intended.

Among other things, solubility is influenced by the properties of the solvent. For example, a molecule can be too hydrophilic (water-loving) or lipophilic (fat-loving), Dr Singh explained. In a biological system, the cytoplasm – which fills the inside of a cell – is a gelatinous liquid and the cell’s wall is primarily composed of lipids. A drug molecule in this milieu should be neither too hydrophilic nor too lipophilic but in between. THCBD “leans slightly towards lipophilicity”, according to Dr Singh. Achieving this “drug-like” balance is crucial for it to be appropriately soluble.

“In our upcoming efforts, we aim to enhance these properties,” he said.

Finally, the researchers’ work on cannabis will “yield significant contributions to the healthcare system,” Dr Ahmed added, “but will also directly benefit J&K by establishment of related industries that will create a sustainable demand for jobs.”

Hirra Azmat is a freelance journalist based in Jammu & Kashmir. Cannabis has the potential to make a dent in India’s fight against the escalating threat of antibiotic resistance.

Scientists at CSIR-Indian Institute of Integrative Medicine (IIIM), Jammu, have found that phytocannabinoids, a class of compounds found in the cannabis plant, possess some hitherto unexplored antibiotic properties.

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Innovations in assistive tech unveiled by CSIR bodies

CSIR

11th January, 2023

At the ongoing International Purple Fest in Panaji, various institutes under the Council of Scientific and Industrial Research (CSIR) have unveiled a spectrum of cutting-edge innovations in assistive technologies, focusing on empowering individuals with disabilities.

A range of innovations, including low-cost prosthetic arms, an electric tricycle, orthotic devices integrated with virtual assistance, and a robotic gait trainer aligned with the 'Make in India' mission, are being showcased to entrepreneurs as scientists are actively seeking collaborations with industries in Goa.

“These inventions signify a significant leap forward in developing accessible and adaptive solutions to address the diverse needs of individuals with disabilities,” said principal scientist Bhausahab Ashok Botre.

Driven by a commitment to extend the reach and impact of these technologies, scientists are looking to partner with local businesses, sharing these innovations and facilitating their cost-effective manufacturing for the benefit of persons with disabilities.

The experts said that the platform not only showcases the scientific prowess and dedication of CSIR's institutes but also puts a spotlight on the potential for industry partnerships to amplify the availability and affordability of assistive technologies.

By leveraging local manufacturing capacities, these innovations aim to make a meaningful difference in the lives of individuals with disabilities, promoting inclusivity and accessibility on a larger scale.

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