

CSIR in Media



75 Years of

CSIR Touching Lives

News Bulletin

4th to 10th May 2018



Pune institute's scientist Sakya Sen bags INSA Young Scientist Medal 2018

CSIR-NCL

10th May, 2018



heading a research group which is working on topics like, synthesis of low oxidation state and low coordination number, s- and p-block compounds and its application into small molecule activation as well as in catalysis. Sen has published more than 50 research papers, in peer reviewed international journals and currently has been guiding 6 PhD students at the institute. He was also the recipient of the CSIR-Young Scientist award in chemical sciences in 2017 and has been selected as a Young Associate of the Indian Academy of Sciences, Bangalore (2017-2020).

A senior scientist at Council of Scientific and Industrial Research-National Chemical Laboratory (CSIR-NCL) Pune, Sakya Sen, has received the INSA Young Scientist Medal 2018 from the Indian National Science Academy (INSA), New Delhi. The organisation was established with the aim to promote science in India and harness scientific knowledge for the cause of humanity and national welfare, and every year, this award is bestowed upon young scientists in India, who with their work and creativity have made notable research contributions in the field of science and technology. Sen, who is one of the prominent scientists at CSIR NCL, is

Another feather to his cap

The INSA award which will add another feather to his cap, will be presented to him at the annual general meeting of the academy, which is scheduled to be held in December this year. Sen completed his MSc in Chemistry from the Indian Institute of Technology (IIT) Kharagpur in 2006 and later went to University of Göttingen,

Germany in 2010, to obtain his Ph.D. in Chemistry. He later received the Alexander von Humboldt postdoctoral fellowship and joined the laboratory of Prof. Holger Braunschweig at the University of Würzburg, Germany.

Published in:
[Hindustan Times](#)

CSIR-IIIM Aroma Mission officially launched at Leh, Ladakh to increase income of marginal and small farmers

CSIR-IIIM

10th May, 2018



CSIR-Indian Institute of Integrative Medicine, Jammu officially launched CSIR-Aroma Mission at Leh Ladakh. An awareness programme “Catalyzing Rural Employment through Cultivation, Processing, Value Addition & Marketing of Aromatic Plants” was conducted under CSIR-Aroma Mission on 09-05-2018 at Shenam Hall, Leh, Ladakh. A team of scientists from CSIR-IIIM comprising of Dr. Dhiraj Vyas and Dr. Sumeet Gairola interacted with a group of more than 100 farmers, students, women self help groups and other participants from different parts of Ladakh. Dr. Dhiraj Vyas welcomed the guest and provided introduction to research

and societal initiatives of IIIM in Ladakh. He also thanked participants on behalf of Director, CSIR-IIIM, Dr. Ram Vishwakarma who has special interest in expanding research and development activities of CSIR in Ladakh. Dr. Sumeet Gairola gave detailed introduction about CSIR- Aroma Mission to the participants and shared the details of aromatic crops suitable for Leh Ladakh. He said that Leh is very suitable for some high value aromatic crops like wild marigold, clary sage, Jammu Monarda, Mentha spp, etc. and informed that Director, CSIR-IIIM, Dr. Ram Vishwakarma is very keen to see the cultivation of these crops in Ladakh at the earliest. Chief Guest of the programme Ms Sargun Shukla, IPS, SSP, Leh in her address appreciated participation of large numbers of women in this programme and encouraged them to take advantage of this opportunity being provided under CSIR-Aroma Mission. She also emphasized that people of Ladakh should encourage their

children to take up farming in modern way to improve their income. Research scholar from CSIR-IIIM, Zubair Ahmed facilitated the awareness programme and interacted with participants about CSIR-Aroma Mission in local language. Other dignitaries who attended programme were Mr. Karma Tsering Director, Mentsekhang Leh, Mr. Suraj Singh DSP, Madam Zubida President, AMI Womens group, Madam Dolma, retired CMO and coordinator of women self help group from Phey.

Published in:
[Scoop News](#)

IORA-RCSTT Coordination Centre on Medicinal Plants at CSIR-CIMAP Inaugurated

CSIR-CIMAP

10th May, 2018

The Indian Ocean Rim Association's regional science and technology transfer coordination centre on medicinal plants has been inaugurated in Lucknow, the Ministry of External Affairs said today. It was inaugurated at the Central Institute of Medicinal and Aromatic Plants (CIMAP) campus in Lucknow on Monday. The establishment of the Indian Ocean Rim Association--Regional Centre for Science and Technology Transfer (IORA-RCSTT) Coordination Centre follows the signing of an MoU between CSIR-CIMAP and the Tehran based IORA-RCSTT on February 24 in Tehran, the MEA said in a statement.

CIMAP is an institute under the Council of Scientific and Industrial Research (CSIR), Ministry of Science and Technology. With the setting up of the Centre, one of India's IORA initiatives has now been operationalised. The Indian Ocean Rim Association's regional science and technology transfer coordination centre on medicinal plants has been inaugurated in Lucknow, the Ministry of External Affairs said today. It was inaugurated at the Central Institute of Medicinal and Aromatic Plants (CIMAP) campus in Lucknow on Monday. The establishment of the Indian Ocean Rim Association--Regional Centre for Science and Technology Transfer (IORA-RCSTT) Coordination Centre follows the signing of an MoU between CSIR-CIMAP and the Tehran based IORA-RCSTT on February 24 in Tehran, the MEA said in a statement. CIMAP is an institute under the Council of Scientific and Industrial Research (CSIR), Ministry of Science and Technology.

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[Business Standard](#)

Aroma Mission Launched at Kargil

CSIR-IIIM



The extension of high value aromatic cash crops under CSIR aroma mission was started on Tuesday here. Prof Mushtaq Ahmad, director extension SKUAST Kashmir, who was the chief guest on the launching ceremony, congratulated the CSIR-Indian Institute of Integrative Medicine, Jammu and KVK Kargil for extending the mission to the district. The function was attended by a large number of farmers, scientists and officers of the Kendra. While speaking on the occasion the chief guest highlighted the importance of various crops like tagetus minuta, mentha piperata, lavender and other target crops in the mission for socio economic upliftment of

9th May, 2018
the tribal farmers in Kargil, a statement here said. He impressed upon the participating farmers for adoption of these crops owing to their suitability and economic returns under specific agroclimatic conditions of Kargil and other adjoining areas. Dr Shahid Rasool, coordinator aroma mission presented in detail the verticals of the mission. He spoke about the avenues and opportunities that can be availed under the mission owing to the economic potential and industrial importance of the different aromatic crops. Referring to the small cropping window in the district, he said the cultivation of annuals like tagetus minuta, monarda citriodora and perennials like mints and lavender can prove highly remunerative to the farmers. Later, a demonstration unit of aroma bearing crops at KVK farm was inaugurated. The participating progressive farmers were enthused with the launching of the mission in Kargil.

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[Greater Kashmir](#)

New technique developed to detect chronic kidney disease

CSIR-IGIB

8th May, 2018



Dignya Desai, Dr. Manali Datta and Professor Ashok Kumar (Left to right)

Indian researchers have developed a technique which can potentially help in rapid detection of chronic kidney disease (CKD). It is a highly sensitive electro-chemical technique, which can be used to detect different stages of the disease. The technique has been put together by researchers of the Council of Scientific and Industrial Research (CSIR)'s New Delhi based Institute of Genomics and Integrative Biology (IGIB) and Amity University, Rajasthan. It has been developed by modifying a multi-walled carbon nanotube electrode with capture protein papain via covalent immobilization. The binding of the probe to the electrode was confirmed by

various microscopic and spectroscopic methods. Cystatin C, a CKD specific marker can bind to the capture molecule producing variations in the electronic transitions occurring through the surface modified electrode. Dr. Manali Datta, researcher of Amity University, who led the study, told India Science Wire, "This technique could detect Cystatin C concentrations corresponding to baseline as well as different stages of CKD. Specificity of the sensor was tested against creatinine, albumin, and gliadin and was found to be highly specific for Cystatin C." "The sensor", she explained, "was tested with spiked samples of urine and was found to give a good accuracy rate. It has been tested in varying pH levels and is able to detect as low as 6 microgram of CKD specific marker per liter of urine". CKD is characterized by gradual loss of kidney function due to degeneration of kidney tubules. Patients with diabetes, hypertension, cardiovascular disease or hormonal imbalances have a

higher risk of developing CKD than those without these complications. CKD is divided into 5 stages based on severity and deterioration may happen over a period of months to years. Detection of CKD is often serendipitous and is normally detected by hospital based urine and blood tests. These tests monitor the protein and creatinine levels in the urine. One of the main disadvantages is that there is a blind spot for serum creatinine testing. The kidney function has to come down by 50 percent if it needs to be detected and this poses a serious threat as required treatment cannot be given at the right time and it could be fatal. Hence there is a need for a more suitable method to estimate the severity of the disease, researchers said. Considering that 72 million diabetics, 110 million hypertensive patients, and 40 million suffering from cardiovascular diseases in India are prone to get CKD, it becomes necessary to develop a point of care diagnostics for the susceptible population. The new technique has the potential to be developed into a point of care device.

“If CKD is detected at an early stage (Stage 1 or 2), mere modifications in diet and intake of ACE inhibitors may prevent the progression to end stage renal disease”, said Dr. Datta. The research team included Professor Ashok Kumar of IGIB and Dignya Desai of Amity University, Rajasthan. Study has been published in a recent issue of journal Biosensors and

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[Outlook](#)

जानकारी

किसानों के लिए सीएसआइआर की तकनीक बनी वरदान, जंगली गेंदा उगा कमा रहे लाखों रुपये

बंजर भूमि में उगाए खुशहाली के फूल

मुकेश मेहरा • पालमपुर

जिस बंजर भूमि पर घास भी पर्याप्त मात्रा में नहीं होता था वहां अब खुशहाली के फूल खिले हैं। जो किसान पैसे-पैसे के लिए मोहताज थे वे अब लाखों रुपये कमा रहे हैं और यह सब साकार हुआ है सीएसआइआर-आइएचबीटी की तकनीक से। जी हां! संस्थान ने जंगली गेंदे की हिमगोल्ड किस्म तैयार की है। इस तकनीक के सहारे किसानों ने पिछले दो वर्ष में 120 हेक्टेयर बंजर भूमि में जंगली गेंदा उगाकर चार टन सुगंधित तेल का उत्पादन किया है और यह सात लाख रुपये प्रति किलोग्राम बाजार में बिका है। इससे 700-800 किसानों को लाभ हुआ है। हिमाचल के साथ-साथ जंगली गेंदे को जम्मू-कश्मीर, उत्तराखंड व मणिपुर में उगाया जा रहा है। संस्थान ने इस वर्ष 250 हेक्टेयर भूमि में सुगंधित फसलें उगाने व 30 तेल निकासी संयंत्र स्थापित करने का लक्ष्य है। बड़ी बात यह है कि बीजों और पौध सामग्री से लेकर तेल निकासी संयंत्र संस्थान ही उपलब्ध



बंजर भूमि पर उगाई गई जंगली गेंदे की फसल • जागरण

हिमाचल प्रदेश की बंजर व खाली पड़ी जमीन के उपयोग के लिए सुगंधित फसलें उपयुक्त विकल्प हैं। फसलों के लिए क्षेत्र की जलवायु उपयुक्त होनी चाहिए। जंगली गेंदा मध्य पर्वतीय क्षेत्रों के लिए सुनहरी फसल है। किसान डेढ़ से दो लाख रुपये प्रति हेक्टेयर कमा सकते हैं। बंजर हो चुकी भूमि के लिए यह बेहतर विकल्प है।

- डॉ. संजय कुमार, निदेशक सीएसआइआर-आइएचबीटी पालमपुर

अरोमा मिशन के तहत हो रहा काम

अरोमा मिशन परियोजना के नोडल अधिकारी डॉ. आरके सूद व उनकी टीम लघु किसानों को संगठित कर उनकी पंजीकृत सोसायटी बनवाकर व्यावसायिक खेती करवा रही है। संस्थान की ओर से किसानों को पौध, बीज सामग्री व प्रशिक्षण दिया जाता है।

क्या है जंगली गेंदा

- गेंदे की विभिन्न प्रजातियों में टैजेटिस माइन्डूटा या जंगली गेंदा सुगंधित तेल के लिए प्रसिद्ध है।
- जंगली गेंदा दक्षिण-पश्चिम हिमालय में 1000-2500 मीटर की ऊंचाई तक उगाया जा सकता है।
- पहाड़ी क्षेत्रों में मई-जून तो मैदानी में अक्टूबर-नवंबर में इसकी फसल उगाई जाती है। फसल चार माह में तैयार हो जाती है।

करवाता है। अगले दो माह में 10 से 12 तेल निकासी संयंत्र किसानों की ओर से चयनित किए गए स्थलों पर लगाए जाएंगे

और इस पर लागत एक करोड़ से ज्यादा है। दो से तीन वर्ष में 500-500 हेक्टेयर भूमि पर 50 तेल संयंत्र लगाने की योजना

सीएसआइआर पालमपुर की है। भारत में गेंदे की तीन प्रजातियां टैजेटिस इरेक्टा, टैजेटिस माइन्डूटा और टैजेटिस पेटुला पाई जाती हैं।

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Sugarcane's toxic waste can turn into a boon for farmers

CSIR-CSMCRI

7th May, 2018



AHMEDABAD: Sugarcane molasses-based distilleries in India are not only water guzzlers but purge a highly toxic residue—spent-wash or vinasse. This unusually viscous dark brown coloured pungent liquid after recovery of alcohol. If let out untreated, it can cause huge damage to the soil, groundwater and rivers. Now for the first time, Central Salt and Marine Chemicals Research Institute (CSMCRI) in Bhavnagar has developed a technology that not only extracts potash fertilizer (potash is generally imported at present in the country) besides

getting nutritious cattle feed binder. Most importantly they extracted pure water from the toxic waste. Industry experts have estimated that nearly 8-15 litres of toxic spent-wash is generated from production of each litre of ethanol. Realising this problem and the large-scale environment damage the toxic waste was causing, in 2015, CSIR-CSMCRI director Dr Amitava Das formed a team of scientists with Pratyush Maiti, Dr Somya Haldar, Dr Subarna Maiti and Sanjay Patil to explore the possibility for utilizing the spent-wash from distilleries as a potential resource for potash fertilizer along with recovery of residual organics. The process will also provide a major impetus to the production of cleaner ethanol blended fuel production. Today, our country's current capacity can produce just 3% ethanol-blended fuels. "If the CSIR-CSMCRI process is adopted, we can produce as much as 10% blended fuels as government will clear expansion of existing distilleries and allow new units," said Maiti.

The first pilot project of the CSIR-CSMCRI process was executed at Kamrej Sugar Mills in Navi Pardi in Surat, while the first commercial deployment of the process plant will be operational at Aurangabad Distillery Ltd in Maharashtra. Maiti said that the spent-wash is generally expelled by the distillery's fermenter blocks and consists of suspended organic and inorganic matter with high toxicity. The non-sugar portion of this coffee brown liquid is coagulated to precipitate out potassium and then converted to potassium sulphate, potassium nitrate and monopotassium phosphate to be used in fertilizers. Whatever is left is evaporated to recover pure water which is recycled back into the distillery plant.

“A normal 60 kilolitres per day distillery plant utilises 600 to 650 cubic meter of ground water, out of which 500 cubic meter of water can be recovered through this process and recycled,” said Maiti. He added, “In our process nothing gets wasted. We extract a nutrition binder in cattle feed that replaces molasses, the distilleries will not be extract groundwater or pollute our precious river resources,” said Maiti.

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[The Tribune](#)

Less than 3 milliseconds: How pesticides can be made to stick to plants

CSIR

7th May, 2018

When pesticides are sprayed on crops, most of it generally bounces off the leaves, falling on the ground. It then mixes with soil and water, contaminating both, and entering the food and water cycle of human beings. This also results in a large amounts of wastage of pesticides. Manoj Kumar, currently working at the National Centre for Biological Sciences, was a PhD student at the Council of Scientific & Industrial Research-National Chemical Laboratory in Pune, when he thought of this seemingly trivial issue as a scientific problem. Students completing their PhD from any of the CSIR laboratories are required to execute a project under the CSIR-800 programme, which encourages scientists to come up with science or technology solutions that can help improve the lives of the 800 million underserved people of the country. The CSIR-800 programme has three focus areas — value-added agriculture, waste-to-wealth, and energy efficiency. As part of his CSIR-800 project, Dr Kumar tried to explore whether it was possible to ensure that the pesticides sprayed on plants stuck to them, and did not fall off. He was not the first one to have given a thought to this problem, though. Farmers have been for decades using home-grown, rather ineffective, methods to solve this problem. One of the most common things that farmers do is to mix a little soap to the pesticide solution in water. Soap reduces the tendency of water to recoil from the plant surface, but does not entirely eliminate it. Mixing of soap is, therefore, a half-solution, at best. During this time, Kumar was working on structures formed by a lipid compound known as glyceryl monooleate (GMO) in a group led by Guruswamy Kumaraswamy. GMO, a wax-like solid, is a natural compound extracted generally from sunflower oil, and is used as a food emulsifier. It is thus edible, bio-compatible and food-grade. The interesting thing about the structure of this compound is that one end of it is hydrophilic (water-attracting) and the other end is hydrophobic (water-repelling).

Following discussions, Kumar and Kumaraswamy decided to test whether this interesting combination of hydrophobic and hydrophilic properties of GMO could make any difference. So they decided to use nanoparticles made from GMO in the pesticide solution instead of soap. The result was quite surprising. A large amount of the pesticide mix was now sticking to the leaves, and not falling off.

Even at low concentrations of the GMO nanoparticles, the water stuck to the leaves, and more and more water stuck to the leaves as the concentration was increased. The mechanism of how this was happening was not immediately evident, and Kumar and Kumaraswamy and their team spent months trying to figure out what exactly was going on. What they eventually found out was that, when the solution was sprayed, somehow the lipid GMO nanoparticles were rushing to the leaf surface and quickly spreading out to make a thin film, of the order of a few nanometres, on the leaves. This film was hydrophilic on the outside. Thus, the water-pesticide mix that followed on to the leaves no longer found it to be repelling, and stuck strongly on to the new surface. The entire process of the GMO nanoparticles hitting the leaves and spreading itself to form a thin coating happened in less than three milliseconds. The scientists say the results can have far-reaching consequences, not just for pesticide use in the country, but also for different kinds of industrial coating applications.

The fact that a vast majority of pesticides could be prevented from falling off to the ground and in water channels would ensure that there was lesser risk of it entering the human food chain. Also, it would substantially reduce the quantity of pesticide sprayed on crops. The researchers have carried out their studies in the laboratory. Now, they are collaborating with the industry to perform tests in open fields. The impact of GMO on the potency of the pesticide, the right combination of GMO and pesticide in the mix, and the cost implications to the farmer are some of the things that are currently being tested.

The research: Finding a compound that could prevent pesticides from falling off the leaves and stems of plants

Researchers: Manoj Kumar, National Centre for Biological Sciences, Bengaluru, Guruswamy Kumaraswamy, CSIR-National Chemical Laboratory, Pune, Mayuresh Banpurkar and Arun Banpurkar, Pune University, Narendiran Chembu, IIT-Madras

Published in:

[The Indian Express](#)

पहल

मुख्यमंत्री ने दिए संकेत, उत्पाद बेचने में एचपीएमसी करेगी मदद

सीएसआईआर को मिलेगा बाजार

■ जयदीप रिहान, पलमपुर

हिमालय जैवसंपदा प्रौद्योगिकी संस्थान द्वारा तैयार किए जा रहे उत्पादों को प्रदेश में विस्तृत बाजार दिए जाने के लिए आने वाले समय में एचपीएमसी से सहयोग मिल सकता है। यह संकेत मुख्यमंत्री जयराम ठाकुर ने सीएसआईआर के दौरे के दौरान दिए हैं। बकौल मुख्यमंत्री सीएसआईआर अनेक तरह के उत्पाद तैयार कर रहा है, जिसे प्रदेश के बाजार में लाने के लिए एचपीएमसी के अधिकारियों को सीएसआईआर के साथ बात करने के लिए कहा जाएगा। ऐसा होने से सीएसआईआर के कांगड़ी धाम, क्रिस्पी फ्रूट्स सहित

अनेक उत्पाद बाजार में आ सकेंगे। मुख्यमंत्री जयराम ठाकुर के हिमालय जैवसंपदा प्रौद्योगिकी संस्थान के दौरे के दौरान



अनेक नए कार्यों का श्रीगणेश किया गया। मुख्यमंत्री ने संस्थान परिसर में औषधीय पौधे जिंको बाइलोबा का रोपण किया। यह पौधा अल्जाइमर

की समस्या से पीड़ित लोगों के उपचार के लिए उपयोगी है। संस्थान और किसान समूहों के मध्य सगंध फसलों की खेती तथा किसानों के खेतों में सामूहिक सगंध तेल निष्कर्षण इकाइयों की स्थापना के लिए समझौते किए। संस्थान द्वारा अरोमा मिशन के तहत सगंध पौधों की खेती और उसके मूल्यवर्धन द्वारा किसानों की आमदनी बढ़ाने के लिए 15.5 करोड़ का प्रावधान किया है, जिसके द्वारा प्रदेश भर में पांच सौ हेक्टेयर बंजर और खाली पड़ी भूमि को सगंध पौधों की खेती के अंतर्गत लाएगा और इन फसलों के तेल निष्कर्षण हेतु प्रदेश भर में किसान समूहों के लिए 50 आसवन इकाइयां लगाई जाएंगी।

हिमालय से सगंध तेल वेबसाइट लांच

तेल के विपणन को सुविधाजनक बनाने के लिए संस्थान की 'हिमालय से सगंध तेल' नाम की वेबसाइट बनाई गई है, जिसका मुख्यमंत्री ने विमोचन किया। अरोमा मिशन के अंतर्गत अनुसंधान और विकास की तकनीकों को किसानों के खेतों में पहुंचाया जाए। इस अवसर पर संस्थान द्वारा तैयार सगंध फसल जंगली गेंदा की उन्नत किस्म के बीज वितरित किए गए, ताकि वे इसे उगाकर अच्छी आमदनी प्राप्त कर सकें। इसी दौरान उन्होंने संस्थान परिसर में औषधीय पौधे जिंको बाइलोबा का रोपण किया। मुख्यमंत्री जयराम ठाकुर ने संस्थान के 'सबेटिकल निलय' का उद्घाटन भी किया।

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Divya Himanchal

New Technology to increase shelf-life of fruits, veggies

CSIR-IHBT

6th May, 2018



Lifelisation technology

In the lifelisation technology, the fruits or vegetables are super cooled after which the water content in them gets converted into crystallised form. The crystallised water can be then removed from the fruit or vegetable. With water removed from the fruit and vegetable, the weight is reduced to just one to two per cent of original. However, the nutritional loss is just a maximum upto 10 per cent, Dr Sanjay Kumar said. Even after removing the water content, the original taste of fruits and vegetables is retained. Since the weight is reduced to just 1 to 2 per cent. These are easy to carry, the shelf-life increases to about six months and the nutrition is retained, the Director of IHBT claimed. He further said the beauty of the technology was that the fruits and vegetables processed through the lifelisation technology could also be restored to their original form in case someone intended to do so. He said in the IHBT corn, apple, banana and some other fruits had been successfully processed through the

The Indian Institute of Himalayan Bio-resource Technology (IHBT), a CSIR centre at Palampur, has introduced 'lifelisation' technology in the country that can help horticulturists of the state and also change the way people eat snacks in our country. Director of the IHBT, Dr Sanjay Kumar, said it had been introduced in India for the first time by their institute. We have standardised the technology as per needs of the fruits and vegetable market in the country. He said if this lifelisation technology was adopted, the shelf-life of many perishable fruits and vegetables could be increased upto six months.

lifelisation technology and the results desired had been achieved.

Its cost

Sanjay Kumar said a unit for processing 100 kg fruits at a time through lifelisation technology would be nearly Rs 2.5 crore. The IHBT has developed a unit at its institute at Palampur. Any interested entrepreneur can come and see the working here. The IHBT was also willing to transfer the technology to any interested entrepreneur, Sanjay Kumar said.

Benefits

The IHBT scientists are of the view that if the technology is promoted by the government it can change the way people consume snacks in the country. Corns produced through the lifelisation technology at the centre in Palampur were experimentally distributed to people of the region and they were accepted very fast. Since no chemical processing and or additives are used in this technology, the fruits and other crops processed through this technology are healthy to eat. The authorities of the IHBT on Sunday showcased the lifelisation technology and other techniques developed by them before CM Jai Ram Thakur.

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Rs. 25 crore outlay for promotion of Natural Farming

CSIR-IHBT

6th May, 2018



since it was devoid of any side effects and was also far more economical. He said that due to over use of chemical fertilizers the fertility of the soil has been effected and at the same time it was causing ill effects on our health. He said that the State Government would provide all possible help to the farmers adopting rearing of indigenous breed of cows. He said that the State Government would establish Gau Sadans at district and sub division level. He said that the Government has decided to use 15 per cent of the offerings from major temples for managing these Gau Sadans. He said that similarly, Rs. one per bottle would be charged from sale of each bottle of liquor for the Gau Sadans. He said that over 70 per cent population of the country lives in rural area with agriculture and allied activities their main avocation. He said that thus it was not possible to even think of development of the nation without focusing on the development of rural areas. He urged the scientists to ensure that their research

The State Government has earmarked Rs. 25 crore in the State Budget for promotion of Zero Budget Natural Farming. He said that the State Government would ensure support to the scientists for carrying out research in different fields. This was stated by the Chief Minister Jai Ram Thakur while addressing the gathering at CSIR Institute of Himalayan Bio-resource Technology (IHBT) at Palampur in Kangra district today during his maiden visit to the CSIR Campus. The Chief Minister said that we should adopt our age old traditional cropping pattern,

reaches the farmers so that they could benefit by adopting latest technologies for increasing their income. He said that it was the need of the hour to take new initiatives in every field to meet out the challenges of globalization. Chief Minister launched website Aromatic oils of Himalayas, developed by the Institute. He also inaugurated Sabbatical Home on the occasion. MoUs were signed with the Farmers Societies on installation of community distribution units on the occasion. Chief Minister also handed over the farmers improved variety of seeds of wild marigold to the farmers. Former Chief Minister and MP Shanta Kumar said that the nation was forging ahead on path of development, but even after over 71 years of independence, lot more needed to be done for the farmers of the country. He said that the Prime Minister Narendra Modi has a vision to double the income of the farmers by the year 2022, which was a matter of great satisfaction. He said that it was vital that the research carried out by the scientists should reach the farms and the common-man. He said that there was immense potential for floriculture and stress must be laid on its proper marketing. He urged the State Government to associate the research of the scientists of the institute with corporate houses. He also stressed on rearing indigenous breed of cows and urged the State Government to promote rearing of this breed. Health and Family Welfare Minister Vipin Singh Parmar while welcoming the Chief Minister said that the Institute was established in Palampur in 1983 and since then it was endeavouring hard to preserve the rich bio-diversity of the State. He said that students passing out from the Institute were doing a commendable service in the field of bio-conservation. He said that the State under the leadership of Chief Minister Jai Ram Thakur was forging ahead on the path of progress and prosperity (Shikhar ki aur agae bar raha hai Himachal). He said that the budget presented by the Chief Minister was a vision document of the Government and shows the commitment of the Government for all round development of the State. Director of IHBT Sanjay Kumar welcomed the Chief Minister and other dignitaries present of the occasion and detailed about various activities being undertaken by the Institute. He said that CSIR-IHBT is the only lab of the Council of Scientific and Industrial Research in the State. He said that the State has a rich bio-diversity and efforts were being made to conserve the same. Food and Civil Supplies Minister Kishan Kapoor, Urban Development Minister Sarveen Chaudhary,

MLAs Rakesh Pathania, Ravinder Dhiman, Arun Mehra and Mulk Raj Premi, former MLA Dulo Ram, Chairperson BJP Mahila Morcha Indu Goswami, Additional Chief Secretary Dr. Srikant Baldi, DC Sandeep Kumar, SP Santosh Patial were present on the occasion among others. Jai Ram Thakur, Vipin Singh Parmar, Sarveen Chaudhary, Kishan Kapoor

Students of Ramakrishna English High School exposed to research activities

CSIR-NML

5th May, 2018



Jamshedpur, May 6: A group of 69 students from Ramakrishna Vivekananda International English High School, Chakuli, accompanied by four teachers Dr. Devojjyoti Shyamal, Shri Bishwajit Roy, Ranjita Ghosh Konar, ShilaMahata visited at CSIR-National Metallurgical Laboratory, Jamshedpur and interacted with scientists and research scholars, under the aegis of Gigyasaprogramme. The students were thrilled to visit the laboratory and interacted with working group. The programme was scheduled for five hours, which comprises an overview of Indian Science and Technology, Documentary film show on CSIR & NML

and labarotray visit of selective units to gain an exposure of modern laboratory and research environment. Dr.P.N.Mishra, Principal Scientist, coordinated and briefed about the programme, discussed an overview of CSIR and NML, its contributions in different branches of Science & Technology. He defined science, science & technology in the Indian perspectives, also discussed about natural resources like ores, minerals, rocks and its value for the development of Nation.Dr. A.K.Sahu has given vote of thanks. After brief up, a laboratory visits programme was organized, S.N. Hembram, Dr. A.K. Sahu, Sr. Technical Officer leads two groups separately and make arrangement to interact with scientists and research scholars. Students further visited to creep testing units of MTE Division. Mr. P. K. Roy, explained about fatigue, creep, fractures prevailing in different types of industrial components. They get exposure of different types machine like Servo Hydro Testing

Machine, Servo Electrical Machine and furnace. A live demonstration was arranged at Analytical Chemistry Centre, MsSoniJha briefly discussed about the role of chemistry units for identification and analysis of ores & minerals with the help of conventional as well as non-conventional methods. Students asked numbers of question and shown their curiosity to gain new knowledge. Dr. Manish Jha of Electronic Waste Unit explained about recycling of waste materials and its adverse effect on environment as well as human beings. Dr. K.K. Sahu, nicely explained about extraction of valuable metals like copper, nickel and cobalt from the polymetallic sea nodule, which are being found inside deep sea. They further visited at Mechanical Testing Unit and know about forging, shaping and rolling machine, wire Drawing Machine, Trolley furnace chamber operated at 1200o centigrade.

Students were surprised to observed the 68 years' history of NML at museum and they asked different question based on sample and poster pertaining to minerals based product and facilities. Teachers and students requested for their next visit to the laboratory for gain deeper knowledge. Teacher expressed their view and was satisfied to know about the consistent effort and research emphasis in various sectors for the ultimate development of India.

CSIR-NCL develops new, stable tuberculosis drug

CSIR-NCL

5th May, 2018



Council of Scientific and Industrial Research - National Chemical Laboratory (CSIR-NCL), has developed a new drug with improved stability to treat tuberculosis (TB). The team at CSIR-NCL, led by AK Nangia, developed the drug in association with the school of chemistry, University of Hyderabad. The research was done in order to ensure a clear way of developing a stable formulation of 4-FDC (4 drugs fixed dose combination) for treating tuberculosis. The study, published in the Journal of Pharmaceutical Sciences studied the cause for the instability of the 4-FDC drug and

discovered a new cocrystal (solid substances which consist of few components mixed together) that addresses the issue. “The stable cocrystal drug with its longer shelf life will improve the prospects of transport logistics and inventory management of TB drugs,” said Nangia. Tuberculosis (TB), an airborne infectious disease, is caused by a species of pathogenic bacteria *Mycobacterium Tuberculosis*. It is one of the top ten leading causes of death worldwide. According to the World Health Organisation (WHO) in the year 2015, an estimated 10.4 million people developed TB and 1.8 million died from the disease, including 0.4 million deaths among HIV-positive people. The team included Suryanarayana Cherukuvada, Devarapaga Maddileti, Swapna Battini, and MK Chaitanya Mannava. They studied the cause for the instability of the 4-FDC drug chemical structures and discovered a pharmaceutically-stable cocrystal. This was done by the application of crystal

engineering principles to improve the stability, so that the drug inhibits the cross-reaction between Isoniazid (INH) and Rifampicin and overcomes the formation of inactive by-products.

The pharmaceutical cocrystals of INH namely, INH-Caffeic acid and INH-Vanillic acid, were used to improve the stability of 4-FDC. As per the findings of the team, the pharmaceutically stable cocrystal of INH is able to improve the stability by greater than 5 times the current stability of 4-FDC drugs. This was followed by a number of stability studies carried out under accelerated conditions of 40 degrees Celsius temperature and 75 per cent relative humidity.

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CSIR-IHBT

4th May, 2018

क्या चीनी की जगह लेगा स्टीविया

चीनी के मुकाबले 300 गुना मिठास, फिर भी कैलरी नाममात्र

Suresh.Upadhyay@timesgroup.com

■ देश में डायबिटीज के मरीजों की तेजी से बढ़ती संख्या के कारण अब इस बात पर गंभीरता से चिंतन हो रहा है कि चीनी की जगह मीठे के किसी सुरक्षित विकल्प पर विचार किया जाए। इस विकल्प के तौर पर एक पौधे स्टीविया के नाम पर वैज्ञानिक एकराय बनाते नजर आ रहे हैं। स्टीविया को आयुर्वेद में मधुपत्र के नाम से जाना जाता है। देश के कई इलाकों में लोग इसे मीठी तुलसी भी कहते हैं। इसके पत्तों में चीनी से 300 गुना ज्यादा मिठास पाई जाती है।

आयुर्वेद की कई दवाओं में मिठास के लिए स्टीविया का प्रयोग सैकड़ों वर्षों से हो रहा है। सीएसआईआर की पालमपुर इकाई इंस्टिट्यूट ऑफ हिमालयन बायोरिसोर्स टेक्नॉलजी के डायरेक्टर

डॉ. संजय कुमार

साइड इफेक्ट्स

कुछ रिसर्च के मुताबिक, स्टीविया के कुछ साइड इफेक्ट्स भी देखे गए हैं जैसे कि चक्कर आना, एलर्जी और सिरदर्द, लेकिन ये दुर्लभ ही होते हैं। वैज्ञानिकों की राय है कि इसका बेफिक्र होकर सेवन किया जा सकता है।

कहते हैं कि परंपरागत स्टीविया के पत्तों में कुछ कड़वाहट होती है लेकिन हमारे संस्थान ने ऐसी किस्म विकसित की है, जिसमें कड़वाहट नहीं। इसके पत्तों को चीनी के विकल्प के तौर पर किसी भी खाद्य पदार्थ या पेय में इस्तेमाल किया जा सकता है। डॉ. संजय के मुताबिक स्टीविया के पत्तों में मिठास तो होती है, लेकिन इनमें नाममात्र की कैलोरी होती है। इससे न शुगर लेवल बढ़ता और

न वजन। भारत सरकार में आयुर्वेद के पूर्व सलाहकार डॉ. एस. के. शर्मा कहते हैं कि स्टीविया को चीनी की जगह इस्तेमाल करने से ब्लड प्रेशर नियंत्रण में रहता है और डायबिटीज के कारण होने वाली दिक्कतों से भी बचाव हो जाता है। एक किलो स्टीविया पाउडर तीन सौ किलो चीनी के बराबर होता है। उनका कहना है कि शुगर पेशेंट्स भोजन में स्टीविया का इस्तेमाल कर मीठे का आनंद ले सकते हैं।

किसानों की बढ़ेगी इनकम
स्टीविया किसानों की आय बढ़ाने में भी अहम भूमिका निभा सकता है। डॉ. संजय के मुताबिक, स्टीविया देश के पहाड़ी और मैदानी इलाकों में आसानी से उग जाता है। सीएसआईआर ने पंजाब, मध्य प्रदेश, यूपी, छत्तीसगढ़, हिमाचल और देश के कई अन्य इलाकों के किसानों को भी इसकी खेती के गुर सिखाए हैं। स्टीविया का इस्तेमाल खाद्य पदार्थों में किए जाने की अनुमति मिलने के बाद से इसकी डिमांड बढ़ गई है। इसकी पत्तियां पांच से छह हजार रुपये किलो के हिसाब से विकती हैं। अब इसके अर्क का पाउडर भी देश के कुछ इलाकों में सैशे के रूप में मिलने लगा है।



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