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Manipur's Kombirei flower: A new addition to Indian Flora

CSIR-NIScPR

31st January , 2023

Kombirei, a religiously associated flower of Manipur which had been misidentified for a long time, has been finally identified as Japanese iris (*Iris laevigata*) and has become a newly added flower to the Indian flora, according to the latest edition of the Indian Journal of Traditional Knowledge. The January 2024 edition of the journal, published under the



Council of Science and Industrial Research-National Institute of Science Communication and Policy Research (CSIR-NIScPR), said *Iris laevigata* Fisch has not been reported earlier, from India and this being the first record from Manipur, it is a new addition to the flora of India.

It added, "Also, due to wrong identification as *I. bakeri*, it was earlier reported as endemic to Manipur. The species is endangered. If no proper conservation measures are taken up urgently, the species may completely vanish from the state and from India as well."

Kombirei or Manipuri Iris, which is considered endemic to Manipur as per the Flora of Manipur (2000), has long been misidentified (misnomer) as *Iris bakeri* Wall (Iridaceae) but after thorough investigation, the botanical identity of this plant has been established as *Iris laevigata* Fisch, says Chief Scientist Dr Huidrom Birkumar of CSIR-North East Institute of Science and Technology, Branch Laboratory in Imphal.

During the 1960's, the Kombirei plant was naturally growing in two wetlands of Manipur, namely Lamphelpat (Imphal West district) and Yaralpat (Imphal East district) but now it has completely vanished from its natural habitat due to various factors like habitat loss and invasion by weeds. A few hundred plants are maintained in a captive farm at the periphery of

Lamphelpat by a private cultural society, viz. Ipathoukok, Dr Birkumar, the key author of the scientific report, added. The other author was Ashiho A. Mao of the Botanical Survey of India.

“So we would like to draw the attention of the concerned authorities to take up the necessary steps for conservation efforts before the species vanishes not from Manipur but from the country,” he felt.

Not only a popular Manipuri romantic song (‘Kombirei Yaralpatki Kombirei’) which describes the plant, but a famous Manipuri feature film entitled Kombirei was also made.

After all, this violet-coloured flower-Kombirei (*Iris laevigata*) along with Kushumlei (*Carthamus tinctorius* L), Leiri (*Symplocos cochinchinensis* Moore) and other flowers, are offered during religious occasions, including Manipuri New Year (Sajibu Cheiraoba).

Nowadays, due to the unavailability of the Kombirei, the blue flowers of other introduced *Iris* species are used as a substitute for it.

As narrated by elders, it is believed that the word Kombirei is derived from the words Kum-Pi-Lei (Kum=season, Pi=dominant, Lei=flower), the most beautiful flower, dominant and full bloom during the early season (Manipuri New Year, which generally falls during the month of April).

“Due to its habitat sensitivity, conservation of this plant should be prioritised, otherwise loss of this species from Manipur may lead to loss of a species from the Indian flora,” says Dr Birkumar.

CSIR committed to make India 'Atmanirbhar' by developing indigenous technologies, says Director General Dr N Kalaiselvi

CSIR-NIO

30th January , 2023

The Council of Scientific and Industrial Research (CSIR) is committed to make India 'Atmanirbhar' by developing indigenous technologies, said Dr N Kalaiselvi, the Director General of SCIR. She was speaking at a press conference held on the 'Role of CSIR in building an Atmanirbhar Bharat', at CSIR-National Institute of Oceanography (NIO), Dona Paula, Panaji, on Monday, January 29.



“CSIR, through its 37 laboratories across the country, are involved in all aspects of their research and development to what extent they can bring in 'Atmanirbharta' for indigenization of technologies, through which we can ensure that the country will become self-sustainable in the coming years. Thanks to Mother Nature, India has all the raw material sources to achieve that mission,” she said.

Dr N Kalaiselvi, who is also the Secretary of Department of Scientific and Industrial Research, said that the country has to prepare itself for its current and future scientific requirements as the world today is moving ahead in an unpredictable manner. “Therefore, the CSIR has already prioritized that any research happening under its aegis should have a component called indigenization,” she said.

Talking about the success stories of 'Atmanirbhar' initiatives of the CSIR, Dr Kalaiselvi said that the CSIR's this year's Republic Day Tableau had highlighted the unleashing of a Purple Revolution ushered through Lavender cultivation in Jammu & Kashmir. CSIR's scientific interventions have led to the phenomenal growth of lavender cultivation and development of

The Tableau had also showcased PRIMA ET11, India's first women friendly, compact, Electric Tractor indigenously developed by CSIR, under agro-mechanical technology. "We are from the scientific fraternity. We can just hand over a technology to a startup. Once the technology is transferred, it becomes the responsibility of the startup to take it to greater heights. But we are not doing that. CSIR handholds the startups and walks along with them throughout their journey. More than 300 agri-startups in Jammu and Kashmir are being supported by CSIR as a remote mission," the DG said, adding that a minor contribution of the CSIR is now giving a greater confidence to the Jammu and Kashmir people.

She further explained how India, which had been importing lemongrass oil for years, became an exporting country by 2023, all thanks to CSIR's Aroma Mission. In the year 2023, the country has exported 600 million tons of lemongrass oil, she said.

Dr Kalaiselvi also mentioned about the hydrogen hydrate producing manufacturing facility under the CSIR that was dedicated to the nation by Prime Minister Narendra Modi in 2022. "While launching the facility, the Prime Minister had promised that commercial production of the hydrogen hydrate will start within one year. In the year 2023, the first batch of commercial production of hydrogen hydrate started. Today, it is a 10,000 tonnes per annum-manufacturing plant." The hydrogen hydrate is now finding its application in chemical industries, processing industries, and several other chemistry-related and pharmacy-related industries.

Talking about the Sustainable Aviation Fuel (SAF) technology, Dr Kalaiselvi said that two aircrafts that took part in the Republic Day flypast were SAF, an indigenously developed technology in the field of aviation. "We have now signed an agreement with Airbus. The Airbus will be making use of our SAF technology. A few more private players are also in talks with us," she said.

C-BOT by NIO

Dr Kalaiselvi on Sunday launched C-Bot, an underwater unmanned vehicle indigenously

developed by the NIO. C-Bot can carry a number of equipment, sensors and gadgets to 200 metres deep into the water, which will help the scientists study the undersea ecosystem. “We have plans to develop an updated version of C-Bot which can go for deep diving thousands of meters into the sea,” she said.

The underwater vehicle will help greatly in studying temperature, humidity and climate related topics. It will help collect samples and take photos, study growing biology in extreme environment, “Actually, the entire Indian Ocean is our target. the total 71 million square kilometers... A lot of studies have taken place in the Pacific and Atlantic. But in Indian Ocean, there are very few countries studying so there is a very large need to study the entire Indian Ocean,” Dr Kalaiselvi said.

CSIR-Jigyasa Program

CSIR-Jigyasa Student-Scientist Connect Program is an initiative of CSIR to promote scientific temper through student scientist connect program. The Jigyasa program is aimed at school and college students along with teachers to inculcate the culture of inquisitiveness on one hand and scientific temper on the other. The program will also enable the students and teachers to practically live the theoretical concepts taught in science by visiting CSIR laboratories and using the knowledge to take up small projects, compete in quiz and also apply to their knowledge for the betterment of society.

Dr Kalaiselvi said that NIO is a role model on how to stay connected with the student community as under Jigyasa Program, several students visit the institute. “It is important to stay connected with the student community as they are the next generation scientific leaders. The NIO has facilities which help students to get real-time experience of sea diving through virtual reality. The NIO has already instilled an interest for science and technology in a number of children in Goa. There are students who visit NIO from other states also,” she said.

Prof. Sunil Kumar Singh, Director, NIO, was also present at the press conference.

Published in:

[Pib](#)

After apple cultivation success in Mizoram, CSIR to harvest new territories

CSIR-IHBT

30th January , 2023

Encouraged by the success of its pilot project on apple cultivation in Mizoram, a first in the Northeastern States, scientists from the country's top research agency, the Council of Scientific and Industrial Research (CSIR), have devised an ambitious plan to expand the cultivation of high-revenue, low-chilling fruit crops in the region, aiming to boost the income of local communities.



This initiative also means that locals won't have to import the fruit from other States, thereby reducing carbon footprints through transportation, as highlighted by Dr Rakesh Kumar, Senior Principal Scientist from CSIR's Institute of Himalayan Bioresource Technology (IHBT) in Palampur. IHBT has been tasked with spearheading apple cultivation in the region. Dr Rakesh Kumar reflected on the success, stating, "Our experiment, involving the planting of the low-chilling apple variety in 2022, has yielded positive results.

While this has encouraged scientists like him to take more such initiatives, locals also seem to be enthusiastic about apple cultivation, considering these crops as a cornerstone of sustainable agriculture and a response to the threats posed by climate change.

"We have identified some potential locations for cultivation in this North-eastern State. To implement these interventions/ technologies, CSIR-IHBT has collaborated with Mizoram Science Technology and Innovation Council in Aizawl (MISTIC), Mizoram, and the College of Horticulture in Thenzawl, Mizoram (CAU, Manipur)," added Er Mohit Sharma, a Chemical Engineer and Principal Scientist who is part of the team for Mizoram initiatives.

Earlier this month, our team visited Mizoram to monitor the growth of aromatic plants and low-chilling varieties of apples, conducting training programmes in various locations, including the College of Horticulture, as mentioned by Dr Rakesh Kumar.

He explained that the region has the potential to produce low-chilling apple types such as Anna, Dorset Golden, Sun Fuji, and others, as these varieties do not require additional and very cold temperatures to flourish.

“Unlike traditional apple varieties, like those grown in Kashmir, which require about a thousand to fifteen hundred hours of chilling, the ones we have introduced in the North East require just about three hundred to five hundred hours of chilling,” explained the scientist.

Meanwhile, Dr Sudesh Kumar Yadav, Director of CSIR-IHBT in Palampur, added that apple cultivation is one of the three projects sanctioned to them by the Department of Biotechnology under the Inter-Institutional Programme to support the development and sustainable utilisation of bioresources in Mizoram. “We are also involved in the promotion of Shiitake and Oyster mushroom cultivation, as well as high-value aromatic crops, in addition to cultivating low-chilling varieties of apples.”

In villages like Khanpui in the Aizawl district, scientists are directly engaging with local apple farmers, assisted by the senior scientific officer of MISTIC, Dr Davy Lalruatlina.

Through immersive training sessions, farmers are gaining crucial insights into apple cultivation, pruning techniques, training methods, nutrient management, and the meticulous creation of irrigation basins and pits.

“This strategic initiative aims to equip farmers with the latest knowledge and skills necessary for successful low-chilling apple cultivation,” informed the scientist.

Published in:

[Dailypioneer](https://www.dailypioneer.com)

Researchers find cure to liver cancer through target therapy

CSIR-CDRI, CIMAP

29th January , 2023

Liver cancer, a growing health challenge often diagnosed in its advanced stages, can be prevented by changing the metabolic programming of cells as a target therapy, a research has concluded. The research, conducted over six years, is a collaborative effort of scientists from CSIR-Central Drug Research Institute (CSIR-CDRI), Central Institute of Medicinal and Aromatic Plants (CIMAP), and Centre of Biomedical Research (CBMR), SGPGIMS, Lucknow.



Led by CDRI scientist Madhav Nilakanth Mugale, the research concludes that cancer cells change metabolic programming, and it can be used as a diagnostic tool for cancer prevention. The research, published in the renowned international journal Elsevier, also unravels crucial insights into the metabolic mysteries behind Hepatocellular Carcinoma (HCC), a challenging form of liver cancer.

Besides delving into the intricacies of HCC, the research opens avenues for targeted therapies. In their research work, CDRI's Mugale and his team utilized an animal model of HCC induced by a substance called Diethylnitrosamine (DEN), mirroring the development of the disease in humans.

The study revealed changes like decreased body weight, higher levels of certain enzymes in the blood, and alterations in the liver structure observed through special staining and microscopy techniques during the progression of HCC.

“Our team used advanced techniques like Immunohistochemistry (IHC) to identify elevated levels of specific markers in the cancerous liver, providing insights into the enhanced cancer-causing potential. They also delved into the role of a signaling pathway called STAT3-NFκB, uncovering its impact on the cell’s metabolism, which was found to be a key driver in the malfunction of mitochondria and reduced cell death,” said Mugale.

He said that an advanced technique called Nuclear Magnetic Resonance (NMR) is employed to analyze the metabolism of the liver cells and blood cells in a highly growing stage.

This revealed abnormal changes in cell cycle, including energy formation and utilization, such as the accumulation of a substance called succinate in the liver tissue, increased breakdown of ketones, and alterations in how the body processes amino acids in advanced stages of HCC.

Importantly, these metabolic changes in cells were found to closely align with the progression of liver cancer, potentially serving as early indicators of the upcoming disease.

“These findings bring hope for more effective interventions in the battle against liver cancer,” shared CDRI director Radha Rangarajan.

Dr Jitendra Singh distributes quality planting material at Kissan Sammelan organised by CSIR IIIM

CSIR-IIIM

29th January , 2023

CSIR-Indian Institute of Integrative Medicine, Jammu on Sunday organised a Kisan Sammelan under Council of Scientific and Industrial Research (CSIR) Aroma Mission-III at Hiranagar, Kathua. Union Minister of State (MoS) Dr. Jitendra Singh, holding independent charge of Science and Technology, MoS PMO, Personnel, Public Grievances, Pensions, Atomic Energy and Space and Vice President CSIR was Chief Guest at the occasion.



DDC Chairman Kathua Mahan Singh, Vice Chairman DDC Kathua Raghunandan Singh, DDC member Karan Attri and Director CSIR IIIM Jammu Dr Zabeer Ahmed were among the prominent personalities present at the occasion.

As per the handout issued here, over 700 farmers from various villages of Hiranagar Tehsil of Kathua attended the day long Kissan Sammelan. On the occasion, Dr. Jitendra Singh distributed the quality planting material of Aroma crops like lemon grass among the farmers of the area.

Addressing the farmers, the minister said that those who have entered in the aromatic crop cultivation have increased their livelihood income to many folds. "Need of the hour is to give wider publicity and awareness among all stakeholders about these new opportunities of livelihood rolled out in recent years," he said. Dr. Jitendra Singh also appreciated the efforts of CSIR for enhancing the income of farmers through CSIR-Aroma Mission which also gave birth to the Purple Revolution in J&K.

In his address, Director CSIR-IIIM Dr. Zabeer Ahmed expressed gratitude to the Union Minister for gracing the occasion and also appealed to the farmers to take full benefits of the CSIR-Aroma Mission through which a strong connection between farmers and scientists have been made.

Dr. Zabeer Ahmed also highlighted the institute's significant contributions to scientific accomplishments through research and innovation. "The societal work carried out by the Institute through implementation of two major mission projects 'CSIR Floriculture Mission' and 'CSIR Aroma Mission' have immensely benefited the farmers and other stakeholders," he said.

He also apprised the gathering that this year's Republic Day celebrations were special for CSIR and CSIR-IIIM family, as the significant contributions of the organisation were showcased in CSIR tableau that passed on 75th Republic Day Parade at Kartavyapath, New Delhi, depicting the success story of CSIR-IIIM's Purple Revolution. He informed that the CSIR tableau garnered much attention and applause from the spectators, dignitaries, and officials present at the Republic Day Parade and rest of India.

"It served as a visual representation of CSIR's commitment to society through industrious innovation, and its role in shaping the scientific future of the nation," he said. Pertinently, the Kissan Sammalen was organised to generate awareness among farmers about the activities envisaged under CSIR-Aroma Mission.

Director, IIIM appreciated the successful conduct of the Kisan Sammelan where farmers from remote areas of Gujjar Chak, Sapalwan, Pansar, Haria Chak, Chanlaldin, Chabbay Chak, Khanpur, Parkhwal, Sitra Chak, Chhapaki, Chandatyal, Boiya, Mehssa Chak, devo Chak, Mandyal, Kotepunnu, Marheen, and Dhanni-Bera participated in large numbers.

The distribution of quality planting materials aims to sensitise farmers of the region about the versatile and high-value aromatic crops.

“The Lavender and Lemongrass varieties developed by the CSIR-IIIM offer immense potential for income generation and diversification of agricultural activities in the region,” he said.

Nodal Scientist Dr. Suphla Gupta from CSIR-IIIM for CSIR-Aroma Mission Phase-III, Dr. Saurbah Saran in-charge technology business incubator and other scientist team of aroma mission present at the event included Dr. Sabha Jeet, Dr. Rajinder Bhanweria, Dr. V.P. Rahul, Akash Verma and Ankush Verma.

Hyderabad-based CSIR-NGRI took up seismic study of Ayodhya Ram Temple site during peak COVID-19

CSIR-NGRI

29th January, 2023

Hyderabad-based CSIR-National Geophysical Research Institute (NGRI) took about a month during the peak COVID-19 pandemic to finalise the various geo-scientific studies at the Sri Rama Janmabhoomi Temple site before the construction began to ensure that the structure is built on a solid foundation and will be able to withstand a quake of up to 8.2 on the Richter Scale.

The premier institute was approached by the then DG-CSIR following a meeting with the chairman, construction committee, Shri Ram Janmabhoomi Teerth Kshetra Trust to investigate the site for seismic hazard, as the site lies in the Indo-Gangetic plain which is vulnerable to the hazards from the Himalayan earthquakes.

“We began the work in December 2020 during the pandemic and the report was handed over to the Kshetra Trust by mid-January 2021. We got our study reviewed by the independent third-party expert group before finalising the report and making the presentation to the stakeholders,” explained senior scientist Anand Kumar Pandey.

Dr. Pandey led the team of more than 25 scientists to the temple site, lugging heavy state-of-the-art equipment to undertake shallow sub-surface imaging and site-specific seismic hazard studies to ensure that the foundation is on strong ground in view of the Sarayu River flowing about a kilometre away.

Scientists point out that the Temple Trust wanted to take all precautions, considering that the great earthquake in 1934 had devastated north Bihar while the 2015 Kathmandu quake tremors were experienced in the entire Himalayan region and the adjacent Ganga plain. What helped them was an existing NGRI seismic station at Faizabad, 10 km away from the temple site, set up under the Indo-Japan collaboration recording continuous live data on the rumblings beneath including the Nepal earthquakes.

Geological and geophysical studies were taken up using Ground Penetration Radar (GPR), Multichannel Analysis of Surface Waves (MASW), Electrical Resistivity and IP tomography (ERT-IP), Deep Resistivity Sounding (DRS), seismometers and seismic accelerometers to monitor even micro tremors at the temple complex. These studies and their variables go as different inputs into the earthquake hazards and design parameter analysis of a site.

“Soil content and layers were checked up to 800 metres, sending power shocks from a 10 KV generator using DRS and CSMT experiment outside the temple complex. We used all non-invasive geophysical techniques without disturbing anything and worked without attracting any unwanted attention with confidentiality,” said the scientist.

With two private infrastructure giants waiting for the studies to be completed to finalise their foundation design and start construction work, the scientists raced against time amid tight security. “We were conscious of the fact that the temple structure will not have any cement, concrete or steel just like the ancient heritage structures built on sandstone or granite. We found the site to be in a stable location situated on the older alluvium, which is older than 10,000 years.”

“We were presenting daily reports on our progress and in discussion with the site engineers. On our recommendation, the foundation was dug up to 15 metres around the temple to lay an engineered foundation, for which the alternative designs were available with the construction companies,” said Dr. Pandey.

Now that the temple consecration has happened, the scientist is more pleased that the NGRI was chosen for the task. “It was a technology demonstration on our part as many in our country are not aware of our capabilities. We have the best available talent and technology at par with anywhere in the world,” Dr. Pandey added, with a hint of pride and satisfaction.

Published in:

[The Hindu](#)

Marrying within own caste is same as consanguinity: CCMB scientist

CSIR-CCMB

28th January, 2023

Marrying within one's own caste (endogamy) may be no different from close relatives marrying (consanguinity) when it comes to genetic diseases, a top scientist has pointed out.

Speaking at a session on 'Who are Indians: Understanding our ancestry' at the Hyderabad Literary Festival, K Thangaraj, CSIR–Centre For Cellular And Molecular Biology senior scientist, said studies have estimated that one third of the Indian population is expected to have population-specific recessive diseases (require two copies of the mutated gene, one from each parent).

Such populations or communities exist in Andhra Pradesh and Madurai according to recent findings, while many more are yet to be discovered.

While tracing the ancestry of Indians, which migrated from South Africa in two waves, Thangaraj said that all of us have shared genes except the population in the Andaman Islands which is different. "Indians are a mixed population with the entire range of extremely light-coloured skin to extremely dark-coloured skin," he said.

"All Indians are a mixture of different communities and different ancestry. There is no population that is of the pure archaic type except in the Andamans. They carry a distinct gene pool as they have remained isolated all this time."

He added that the first wave of the population came from South Africa and settled in the Andamans and the southern part of the country forming the ancestral South Indians. In the second wave, the migration brought people to the northern part, via the middle east and Europe, forming the ancestral North Indians.

"We estimate that the admixture (interbreeding within two isolated populations) in the ancestral

South Indian and ancestral North Indian population took place 2,000-4,000 years back. Due to intermixing ancestral groups carry some amount of the gene pool from others. Genetically speaking, we are all connected,” he said.

Speaking about the caste system, he further explained how all genetic diseases happen due to a mutation in one chromosome. Citing the example of the Vaishya community in Andhra Pradesh in which muscle relaxants (given before surgery are found to have a disastrous effect and the Kaalaiv community near Madurai which is prone to skin and cardio vascular abnormality, the expert said that such populations exist in rural areas across the country.

“These populations are going to have a huge impact on health and there is a need to screen them,” he said, adding that detailed screenings are being planned.

CSIR-IIIM Jammu celebrates Republic Day with scientific achievements

CSIR-IIIM

28th January, 2023

CSIR-Indian Institute of Integrative Medicine (IIIM), Jammu, marked the 75th Republic Day with fervour, patriotism and a sense of national pride. Dr Zabeer Ahmed, Director of IIIM, hoisted the National Tricolour and presided over the ceremonial march past by the Security personnel of CSIR-IIIM, Jammu, and the student contingent of Regional Research Laboratory High School. In his address to the Scientific, Technical, and Administrative staff, including the staff and students of RRL High School, Dr Zabeer not only emphasized the institute's significant contributions to scientific research and innovation but also highlighted its societal impact through projects like 'Floriculture Mission' and 'Aroma Mission' benefiting farmers, the CSIR said in a press release.

Dr Ahmed proudly shared that CSIR-IIIM's tableau, depicting the success story of the institute's Purple Revolution, was showcased at the 75th Republic Day Parade in Kartavyapath, New Delhi. The Lavender tableau received attention and applause, symbolizing CSIR's commitment to excellence, innovation, and its pivotal role in shaping the scientific future of the nation.

Expressing appreciation for the outstanding work of the Science and Technology staff and students, the Director IIIM encouraged them to continue their efforts with greater zeal and enthusiasm to contribute to the development of a prosperous India. The celebration included a vibrant cultural program presented by the students of Regional Research Laboratory High School, Canal Road, Jammu, captivating the audience. Prominent personalities present at the event included Er Abdul Rahim, Chief Scientist & Head RMB & IST Division, and Br Lab Srinagar, Dr Dhiraj Vyas, Dr Sumit Gandhi, Dr Naveed Qazi (all HODs), Vikram Singh, Senior Controller of Administration and Prof Abid Hamid Dar, Head of the Department of Biotechnology, Central University of Kashmir.

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Risingkashmir

Ayodhya Ram Temple can withstand once-in-2,500-year quake due to its 'superstructure material': Scientists

CSIR-CBRI

28th January, 2023

The Ram Mandir in Ayodhya has been meticulously engineered to endure seismic events that occur once every 2,500 years. This feat of structural resilience was confirmed by scientists and researchers from the CSIR-Central Building Research Institute (CSIR-CBRI), who conducted comprehensive scientific studies on the temple's site.

These studies included geophysical characterization, geotechnical analysis, foundation design vetting, and advanced 3D structural analysis. The primary objective was to ensure the temple's structural integrity against the Maximum Considered Earthquake, which is equivalent to a seismic event with a 2,500-year return period.

Senior scientist Debducta Ghosh from CSIR-CBRI highlighted that the temple's three-storey superstructure can withstand tremors of magnitude 8 on the Richter scale. The structural design was perfected after simulating over 50 computer models to achieve optimal performance, architectural elegance, and safety. Notably, the temple is constructed using Bansi Paharpur sandstone in a dry jointed manner without any steel reinforcement, aiming for a lifespan of 1,000 years.

“The scientific study was done to ensure the structural safety of the temple for the Maximum Considered Earthquake, equivalent to a 2,500-year return period,” Debducta Ghosh, a senior scientist at CSIR-CBRI, told PTI.

Specialised bricks with a compressive strength exceeding 20 MPa (megapascals) or approximately 2,900 psi (pounds per square inch) have also been utilized, ensuring the temple's robustness. The temple's earthquake-resistant design includes 392 pillars and 12 doors, and instead of iron, copper chips are employed to join stones, further contributing to its durability.

The Pran Pratishtha (consecration) ceremony of the temple took place on January 22, 2024, marking its official inauguration. The completion of the entire temple is anticipated by December 2024. As it stands, the Ram Mandir not only serves as a place of worship but also as a testament to India's advanced engineering capabilities and commitment to preserving cultural heritage through state-of-the-art construction techniques.

IHBT Palampur team visits SRHU

CSIR-IHBT

28th January , 2023

A five-member team (4 offline and 1 online) of scientists, comprising Dr Rakesh Kumar, Dr Mahesh Gupta, Dr Mohit Sharma, Dr Bhavya Bhargava and Dr Rakshak Kumar (online) from the Institute of Himalayan Bioresource Technology (IHBT), Palampur, visited Swami Rama Himalayan University, Jolly Grant, on 23-24 January in furtherance of the MoU signed between CSIR-IHBT, Palampur, and SRHU,



Dehradun. Presentations were made by the IHBT team on their current R&D protocols developed, patents obtained and technology transferred to multiple stakeholders including many startups, companies, farmers and clusters pan India.

The major focus was on sharing of end-to-end technologies developed under CSIR Floriculture Mission Phase II; CSIR Aroma Mission Phase III; Organic Farming; Food & Nutraceuticals; and Bio-process technology for Bioactive Medicinal and Aromatic plants. The SRHU team shared its core R&D interests; assistance in cluster development for good quality local spices i.e. Haldi, Kesar, Hing and Ginger; their quality assurance and processing for marketing through the Rural Development Institute's field units and Toli campus, Pauri Garhwal; floriculture, and local fruit-drying technology such as for apples being an integral part of the process.

The Vice Chancellor of SRHU advised focus on 4-5 areas for effective ground-level implementation. He suggested sharing of knowledge by IHBT for setting-up the Herbal Garden being developed by the Himalayan School for Pharmaceutical Sciences (HSPS) in an area of five acres within the campus for growing a variety of local herbs. A project for

growing Shiitake mushroom by training of suitable researchers at IHBT; exchange visit of scientists from SRHU to IHBT in mid-April, 2024; and training of faculty & research fellows at IHBT were also agreed to.

CSIR's Republic Day Tableau highlights the Purple Revolution through Lavender Cultivation in Jammu & Kashmir

CSIR

27th January , 2023

The Council of Scientific & Industrial Research's Republic Day Tableau highlighted the unleashing of a Purple Revolution ushered through Lavender cultivation in Jammu & Kashmir. CSIR's scientific interventions have led to the phenomenal growth of lavender cultivation and development of lavender products taking lavender from lab-to-market and creating several agri-start-ups in J&K. The



Tableau also showcased India's first women friendly, compact, Electric Tractor developed by CSIR. The visually enchanting Tableau aligns with the Viksit Bharat theme of the Republic Day Parade 2024.

CSIR developed an elite variety of lavender suitable for cultivation in temperate regions of J&K and provided free saplings and end-to-end agro-technologies to farmers and also installed distillation units for essential oil extraction in several regions of J&K. The success of Lavender cultivation in J&K earned it the sobriquet, 'Purple Revolution'.

The front section of Tableau represented ample cultivation of lavender and an empowered 21st century woman farmer figurine from J&K. The middle section showcased scientific interventions by CSIR scientists and providing quality planting materials to a farmer and also featured farmers working on the lavender farmland.

Under agro-mechanical technology, the indigenously developed India's first women-friendly compact electric tractor of CSIR, PRIMA ET11, was showcased. Highlighting agro-technical

developments, the distillation unit for extracting essential oil from lavender flowers was also shown.

The rear section features the concept of Agri-start-ups in India and export of lavender based products (perfumes, oil, incense sticks). The all women CSIR Tableau showcased achievements under Government's initiatives of scientific developments enhancing farmers' incomes, Naari Shakti, Agri-start-ups and global business.

Two-day Kisan Mela Begins At CSIR-CIMAP

CSIR-CIMAP, NBRI

27th January , 2023

A two-day Kisan Mela was inaugurated on Tuesday at CSIR-Central Institute of Medicinal and Aromatic Plants, Lucknow. The chief guest, Dr Ajit Kumar Shasany, Director, CSIR-NBRI inaugurated the program. Dr. Sanjay Kumar, the conveyor of the Kisan Mela briefed the activities for the two-day program of Kisan Mela to the dignitaries and the audience.



During the Kisan Mela, Dr Prabodh Kumar Trivedi, Director, CSIR-CIMAP welcomed the chief guest and guest of honour, industry representatives, media personnel, farmers, etc. On this occasion, he said that CSIR-CIMAP under its flagship program, Aroma Mission enabled the self-sufficiency of India in lemongrass essential oil, formerly which was imported from other countries.

He also said that on Wednesday UP Chief Minister Yogi Adityanath will be the chief guest and Agriculture Minister Surya Pratap Sahi will be the guest of honour. Along with this, Dr Nallathambi Kalaiselvi, Director General, CSIR and Secretary, of the Department of Scientific and Industrial Research (DSIR) will also be present.

Chief guest Dr A.K. Shasany addressed the gathering and appreciated the efforts of CSIR-CIMAP. He also stated that CSIR-CIMAP should publicize the farmers' connect success stories so that new farmers and entrepreneurs can join the medicinal and aromatic plant cultivation. At the same time, efforts should be made to connect farmers and entrepreneurs so that the income of farmers can increase.

Pradeep Jain, General Secretary, the Essential Oil Association of India (EOAI), stressed that the government should declare the Minimum Support Price (MSP) for medicinal and aromatics plants, like in other crops so that farmers acquire the benefits. During the inaugural ceremony, the Mentha insect crop calendar along with herbal products and an essential oil kit was released by the dignitaries.

A nukkad natak representing the glimpse of Kisan Mela was also staged during the ceremony by the scholars of CSIR-CIMAP. Subsequently, Kisan Goshthi was held for brainstorming between industry representatives, farmers, and scientists. More than one thousand farmers registered in the Kisan Mela on the first day. At last, the vote of thanks was given by Dr Sanjay Kumar.

CSIR-Human Resource Development Centre signs MoUs with four Sector Skill Councils

CSIR-HRDC

24th January , 2023

The CSIR-Human Resource Development Centre (CSIR-HRDC), Ghaziabad (UP) signed a collaborative Memorandum of Understanding (MoU) with M/s Agriculture Skill Council of India (ASCI), Capital Goods & Strategic Skill Council (CGSSC), Hydrocarbon Sector Skill Council (HSSC) and Life Sciences Sector Skill Development Council (LSSSDC). The MoU envisages to create an enabling environment for CSIR and Indian industry.



CSIR launched a national-level unique Program “CSIR Integrated Skill Initiative” in 2016 to equip young minds with the necessary technological skills through exposure to CSIR laboratories and address the critical needs for the technical gap created by the enormous usage of advanced technology.

Beneficiaries from this initiative includes school dropouts, farmers, ITI diploma holders, graduates and doctorates. CSIR has so far trained over 1.50 lakh individuals, under this Initiative, through 4500+ skill-based trainings, including special programs for rural citizens and women. Under this programme, Biological, Chemical, Engineering, Information and Physical Sciences of broad scientific clusters of CSIR are covered.

CSIR-Human Resource Development Centre (HRDC), Ghaziabad (UP), the centralised training unit of CSIR and the Nodal Office of skill initiative, has been playing significant role by periodically reviewing, monitoring and evaluating the performance of the Initiative.

To improve the performance of this initiative by enhancing employability and entrepreneurship opportunities for the Indian youth, CSIR-HRDC has signed the MoU with four Sector Skill Councils (SSCs) - ASCI, CGSSC, HSSC and LSSSDC. On signing the MoU, both CSIR laboratories and SSCs are expected to exchange their expertise to strengthen the skill ecosystem by running joint-programs, availing each other's services with the aim of enhancing employability and entrepreneurship opportunities for Indian youth and enable them to enter the global market.

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