CSIR in Media

Platinum Jubilee 1942-2016

75 Years of

CSIR Touching Lives

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SCIENTISTS AMONG WORLD'S BEST: HARSH VARDHSAN

CSIR 3rd January, 2018

NDIA'S scientific research institutions and its scientists and researchers are among the best in the world, Union Minister of Science and Technology Harsh Vardhan said on Monday. India ranks third worldwide in nanotechnology and in terms of the number of important scientific publications, the country occupies the fifth spot, Vardhan said. The minister made the remarks while addressing the curtain raiser ceremony of Prof S N Bose's 125th Birth day celebrations at the S N Bose National Centre for Basic Sciences here.

"We are the third in nanotechnology in the world and among the government-funded institutions in scientific research, our Council of Scientific and Industrial Research (CSIR) occupies the ninth spot among the 1,200 institutions in the whole world," Vardhan said while paying tribute to the rich legacy of scientists like S N Bose.

"Our institutions are comparable to the best in world and our scientists are among the best," he said, appealing to the community of scientists to use scientific gains to solve unresolved issues faced by millions of people in India. Referring to Bose, the minister said his memory always inspires future generations and his fundamental science theory helped in future inventions by others.

Bhabha Atomic Research Centre 'Hombi Bhabha Chair' Prof Srikumar Banerjee referred to Bose's path breaking work in Quantum Statistics, which is considered to be one of the last four revolutionary papers on old Quantum theory. The other three belong to Planck, Einstein and Bohr. He also referred to Bose-Einstein Condensation in 2001 and the discovery of the Higgs Boson in 2013.

Institute Director Prof Samit K Ray said the institution had been set up in 1986 as an autonomous body under the Department of Science and Technology and carrying out research activities in various fields including quantum statistics, astrophysics and theoretical science.

“We will commemorate the 125th birth anniversary by organising seminars, academic and social outreach activities throughout the year,” he said.

Published in:
The Hitavada

IICT scientists come across antibiotic producing bacteria

CSIR-IICT

3rd January, 2018

Called RAB 12, it produces the chemical compounds RSP 01 and RSP 02

Scientists at the Indian Institute of Chemical Technology have discovered in their backyard, a novel strain of bacterium that produces compounds with antibiotic properties. They have isolated a strain of Streptomyces species from the Institute's soil that produces two anti-biotic compounds.Actinomycin D, a drug on the list of WHO's 'List of Essential Medicines', exhibits both antibiotic and anti-tumour activity. It is among the oldest drugs used for treatment of many types of cancers.

The team of researchers, led by Prakasham Reddy Shetty, described their findings in the journal Applied Microbiology and Biotechnology. The novel strain, called RAB 12, produces the chemical compounds RSP 01 and RSP 02 that showed antimicrobial activity. Both these compounds have exhibited antibiotic activity ten times more potent than Actinomycin D.

"Antimicrobial activity profile revealed higher antimicrobial activity against bacterial strains Pseudomonas aeruginosa, Micrococcus luteus, Staphylococcus aureus, Salmonella typhi, and Bacillus subtilis and Candida albicans compared to standard Actinomycin D," the researchers wrote in their research paper. In their study, the researchers also described the minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) for one of the compounds to be ten times smaller than that of Actinomycin D. "MIC and MBC for RSP 01 were observed to be 0.0039 and 0.0078 (*mu*g/ml) against C. albicans, while for actinomycin D, it was found to be 0.031 and 0.62 (*mu*g/ml), respectively indicating a tenfold higher potency," the researchers said.

The IICT has put together a large repository of bacterial isolates from soils collected from various parts of the country.

Scientists are yet to analyse the antibiotic potential of many of those isolates. In the case of RAB 12, the study authors say the two compounds, RSP 01 and 02, are promising candidates for industrial and clinical applications.

Published in:
The Hindu

Most beaches in Vizag unsafe for swimming: Study

CSIR-NIO

3rd January, 2018

Visakhapatnam: The beaches in Vizag have significant importance of tourism, but most of them, save for the Lawson's Bay beach, are not safe for swimming during all the seasons like southwest monsoon and northeast monsoon. It was found by a team from the department of Meteorology and Oceanography, Andhra University during their on-going study on the "Rip Current Forecast" along a 60-km long city coast from Yarada beach to Bheemili beach via RK beach. Prof KVSR Prasad, principal investigator of the study, said that all the beaches from Bheemili to Yarada have three to four times more than the normal level of the velocity of sea water current. "The normal velocity of a sea water current is one meter per second. If the velocity of the sea water current exceeds it normal level, it pulls inside the objects from the coast.

The beaches having dangerous rip current velocity levels are not safe for swimming and surfing," Prasad added. The preliminary observations of the study show that the beaches like Bheemili, Rushikonda, Sagar Nagar, Jodugullapalem, Tennetipark beach, RK Beach, Gangavaram beach and Yarada beach are unsafe. However, the Lawson's Beach is always safe as it has shallow water and has below the normal levels of the velocity of the rip current. Prasad said that an Ahmedabad based Space Applications Centre (SAC), owned by Indian Space Research Organisation (ISRO), assigned the task of conducting the study on the Rip Current Forecast to the AU's meteorology department to the Vizag's city coast and National Institute of Oceanography (NIO) Goa to the Goa's coast. "We have to study the city coast and submit the report to the SAC within next one and half year. We are five members working on the project assigned to us by the SAC for Rs 30 lakh," Prasad added.

Published in:

The Times of India

CSIR-CCMB

2nd January, 2018

Side effects of human-animal interaction

SEVERAL diseases caused due to parasites, viruses and fungi that afflict humans are supposed to have originated from animals. Some of them, like Ebola, pose serious threat to human health. Such diseases get transmitted to humans through contact with animals.

Now, a new study has found that parasites that are normally found in humans and livestock also occur in wild animals. The study was done among Nilgiri langurs, a primate species found in the Western Ghats, by a group of scientists from the Hyderabad-based Centre for Cellular and Molecular Biology (CCMB).

An analysis of faecal samples from langurs showed the presence of 13 gastrointestinal parasite types which are known to infect humans and livestock. The richness of parasite species was higher in animals living in disturbed forest fragments than those from relatively undisturbed forest areas. This, scientists say, might be due to fragmentation of the natural habitats, resulting in greater proximity to human settlements and their livestock.

However, it was observed that the primates are adapting to changes in their habitat like reduced tree density, canopy cover and tree height. Results of the study, funded by the Department of Biotechnology, have been published in journal Current Science. These animals have ability to survive in disturbed habitats.

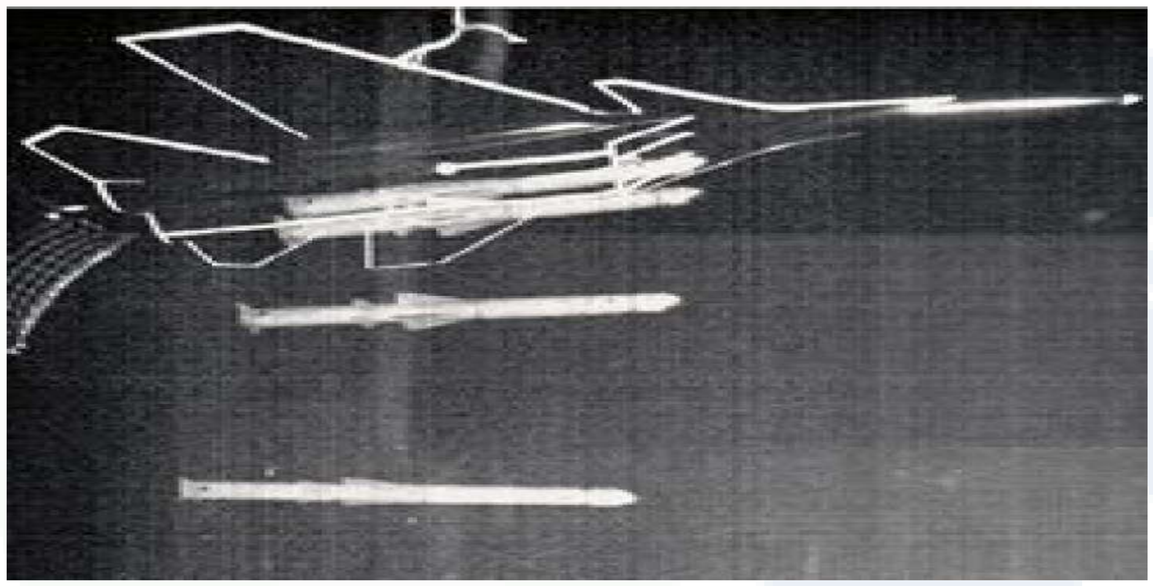
Published in:

Mail Today, Page no. 13

NAL bailed out BrahMos ALCM when Russians asked for the Moon

CSIR-NAL

2nd January, 2018



Bengaluru, Dec 28: India rightly celebrated ‘BrahMostav’ of a different kind when the frontline striker Sukhoi Su-30MKI fired a modified BrahMos supersonic cruise missile for the first time recently.

The feat of a Su-30 MKI, piloted by Wg Cdr Prashant Nair taking off from Kalaikunda Air Force Station on November 22, 2017, carrying the 2.5-tonne Brahmos missile and returning to the base after piercing the target in less than an hour, has already found a place in the history books. But there’s a missing link to this piece of inspiring military history.

One name that missed out the pressers and headlines prominently was National Aerospace Laboratories (NAL), a leading laboratory under Council of Scientific & Industrial Research (CSIR), based out of Bengaluru.

It was NAL who bailed out the BrahMos Aerospace during 2013-14 period, when the greedy Russians were asking for the moon to conduct a series of wind-tunnel tests ahead of the actual integration of the BrahMos Air Launch Cruise Missile (ALCM) on to Su-30MKI.

Military sources now confirm to Mathrubhumi that the Russians demanded ‘exorbitant charges’ to carry out these tests, a first-time experience even for them, since India was the first country to integrate a supersonic cruise missile on to fighter jet. The Russians are said to have quoted over Rs 1300 crore with no commitment on transfer of technology. The Indian team, consisting of members from BrahMos, Hindustan Aeronautics Limited and the Indian Air Force (IAF), then turned to NAL for help.

NAL, with their extensive knowledge of carrying out wind-tunnel experiments for various national military and space missions, accepted the challenge and delivered the test results at 120th the cost of what the Russians had sought for.

How NAL executed the challenging task

For NAL, it was a first-time-experience to undertake drop test of stores from a Su-30MKI aircraft model. At their 1.5m low-speed wind tunnel, using Froude Scaling & principles, the scientists carried out tests at low speeds of (M<0.3). A Su-30 MKI model, the largest aircraft model, was designed, fabricated and commissioned at a record time at NAL’s National Trisonic Aerodynamic Facilities (NTAF). [A trisonic wind tunnel is capable of testing flight vehicles at subsonic, transonic and supersonic speed ranges.

The study provided the ideal conditions for the stores release at actual flight Mach numbers including the deflection setting angles for the fore and aft fins. The software developed allowed tracking of the time-resolved displacement, velocity, acceleration and Euler angles. The composite image of the missile was recorded at four different instances along the trajectory. NAL used appropriately scaled models of Su-30MKI and BrahMos missile for testing in low speed and high speed wind tunnels. Aerodynamic loads on the isolated missile loads were measured in

the 2-ft wind tunnel and the same model was attached to the aircraft model. Later, the aerodynamic loads on the complete configuration was determined in the 4-ft wind tunnel simulating flight Mach number range of 0.55 to 1.2 conditions at various angles of attack and sideslip to ascertain installation effects, store load in carriage position and in aircraft interference flow-field.

Store separation critical for airborne missions

Those associated with the ALCM mission from the early days say that the store separation of the weapon is the critical milestone for any airborne weapon program. Highly specialized and complex tests such as ‘Dynamically Similar Tests’ or ‘Drop tests’ were conducted for the first time in India at the Experimental Aerodynamics Division of NAL. In ‘Drop tests’ the missile model is dropped in the wind tunnel simulating aircraft speed, altitude and other parameters and separation trajectories are analysed. These tests were crucial for getting clearance for the BrahMos separation trials. The wind tunnel tests were conducted in phases in 4-ft and 2 ft trisonic wind tunnels of NTAF. For the store separation tests, grid studies were carried out in 4-ft trisonic wind tunnel in NTAF to see the effect of BrahMos on the Su-30MKI aircraft model in carriage position. The team also undertook air-intake studies to study whether the presence of the missile affects the performance of the air-intakes of the Su-30MKI. NAL was also involved in the crucial task of envelope expansion of the aircraft with the launcher, developed by BrahMos Aerospace Thiruvananthapuram Ltd. When cross-checked, the complete test results even surprised the Russians who acknowledged that NAL findings were better and more accurate than what they had derived at. NAL’s wind tunnel results matched very well with the results of the actual flight data. The capabilities developed are now being applied to other airborne weapon integration programmes. The path-breaking tests fetched NAL the Best Laboratory Award in 2014 from BrahMos, presented by former President Dr A P J Abdul Kalam. Interestingly, India has named the hypersonic version of BrahMos after Dr Kalam.

Telangana Today

Artificial intelligence diagnoses asthma, identifies subtypes

CSIR-IGIB

1st January, 2018

The algorithm has 80% sensitivity and 75% specificity in identifying childhood asthma

Using machine learning, a field closely related to artificial intelligence, upon nuclear magnetic resonance (NMR) spectra of exhaled breath condensate, Delhi-based researchers have been able to improve the diagnosis of childhood asthma and even identify three asthma subtypes. This pushes the current understanding of childhood asthma towards having metabolomic (study of chemical processes involving metabolites) subtypes, which have been largely unknown so far. A team of researchers led by Dr. Anurag Agrawal from Delhi's CSIR-Institute of Genomics and Integrated Biology (IGIB) and Dr. Tavpritesh Sethi from IIIT-Delhi and AIIMS has now achieved a measure of success. The researchers have been able to correctly identify children with asthma and also the subtypes along with potential biomarkers.

The study included 89 asthmatic children below 18 years and 20 healthy individuals with no history or clinical manifestation of asthma to identify the NMR signatures of asthmatic children; the NMR spectra of 61 asthmatic children with clinical data were used for identifying the subtypes. In an ongoing cohort at AIIMS, the children have been followed up for five years now, says Dr. Koundinya Desiraju from CSIR-IGIB and one of the first authors of the paper published in the *Journal of Translational Medicine*.

Unlike other researchers who looked for specific metabolites in exhaled breath using NMR, Dr. Agrawal and Dr. Sethi looked for global NMR signatures of all metabolites from exhaled breath that was condensed at -80 degree C. "Unknown and highly variable dilution of exhaled breath has been a major problem in this field. Unlike in the case when specific metabolites are looked for, the overall shape of the signature will remain the same immaterial of the dilution of exhaled breath," says Dr. Agrawal.

But the challenge with studying global signatures is that human eye is not equipped to seeing hundreds of peaks and picking out a pattern. This is where artificial intelligence came in handy. The algorithm was able to differentiate the total NMR spectrum (which was normalised) of healthy children and those who had asthma. It could also identify three subtypes of asthma. The algorithm has 80% sensitivity and 75% specificity in identifying children with asthma.

"We could correlate the different subtypes with different clinical manifestations," says Dr. Agrawal. Children belonging to subtype 1 showed a typical signature of ammonia metabolite but had no family history of asthma. "This asthma subtype is more like the typical allergic form of asthma," says Dr. Sethi. "But subtype 3 had lower blood eosinophilia and elevated neutrophilia compared with the other two subtypes. Children belonging to this subtype had a stronger family history of asthma and suffered from more acute asthma episodes even when on treatment." Subtype 3 showed a peak corresponding to formic acid. Subtype 2 had high eosinophil count but was otherwise similar to subtype 1, but very different from subtype 3.

"Not every chemical difference in exhaled breath will translate into clinical difference. To know if there is any clinical difference in children belonging to subtype 1 and 2, more children have to be followed up for a longer period of time," Dr. Agrawal says. Currently, there is no difference in treatment for children belonging to three subtypes. "Knowing the difference between subtype 1 and 2 as one group and subtype 3 will help in better treatment

strategies, which is the goal of precision medicine," Dr. Sethi says. "Children with subtype 3 asthma may need more aggressive therapy or alternative treatment strategy. But at this stage of the study we don't know the details."

The next step will be to validate the signatures as biomarkers of asthma subtypes. For this, the subtype 1 and 2 will be looked together and contrasted with subtype 3.

Published in:
Matrabhumi

WE'RE GOING OVER THE MOON

CSIR

1st January, 2018

Namma city will get ample chances to prove its prowess to the world. Go for gold, Bengaluru

God Speed, Tejas

The much awaited Final Operational Clearance of the indigenous fighter jet Light Combat Aircraft Tejas is expected to take place in 2018. Attaining the FOC will help IAF replenish its depleting squadron strength. The FOC aircraft would incorporate Beyond Visual Range missiles, improved and better stand-off weapons and air-to-air refueling capability. Namma city will get ample chances to prove its prowess to the world. Go for gold, Bengaluru

ISRO set to make history, again

ISRO has set itself an ambitious target for 2018 -- that of launching one rocket every month. This includes putting its own satellites in space as well as commercial launches of foreign countries. This will help ISRO project itself as a reliable and competitive space agency among space faring nations. In 2017, ISRO had five launches of which four were successful and one a failure.

Fly like an eagle, SARAS

The SARAS aircraft test flight will be one of the most anticipated sorties of 2018. The flight, which is expected to take place in January, will be the first flight of the aircraft in nine years. On March 6, 2009 a SARAS prototype aircraft crashed in Seshagiri Halli near Bidadi in the outskirts of Bengaluru killing three IAF Officers.The SARAS PT1N (the new aircraft) has undergone a lot of modifications.

A shot at glory

Bengaluru-based aerospace startup, Team Indus, will attempt to place its spacecraft on the moon's surface, move it at least 500 m and transmit high-definition video and images back to the Earth stations before March 31, 2018. If successful, it will win the $30 million prize from Google and earn its place in the world. The TeamIndus spacecraft will also carry 10 to 15 payloads which includes a telescope called the Lunar Ultraviolet Cosmic Imager developed by students from the Indian Institute of Astrophysics and a retro-reflector device. Also accompanying the TeamIndus's robotic rover would be another one developed by HAKUTO, a Japanese team which is one of the competing teams.

MoonWalker

Another moon mission, the Chandrayaan-2, will be launched in the first quarter of 2018. The Chandrayaan-2 spacecraft is a composite module consisting of orbiter, lander and rover. Unlike Chandrayaan-1, where the Moon Impact Probe (MIP) crash-landed on the surface of the Moon, Chandrayaan-2 will soft-land its lander with rover on the lunar surface to conduct next level of scientific studies. Many new technologies are being developed indigenously to achieve the mission requirements.

Rocketman

For ISRO's workhorse -- the Polar Satellite Launch Vehicle (PSLV) -- 2017 was a year of bittersweet memories. While it earned kudos for its record breaking feat of simultaneously launching 104 satellites, it also suffered a failure -- that of PSLV-C 39 on August 31. In January, ISRO will use the PSLV for the first time after last year's failure. The PSLV will launch the Cartosat-2 satellite along with 28 foreign satellites and hopes to get over last year's setback.

A new bird

Another multi purpose aircraft which was hitherto only used for military operations could soon be ferrying commuters to Tier-II and Tier-III cities giving a major boost to the UDAAN scheme. HAL's Dornier could be used for commercial operations. HAL Do-228 aircraft has got the unique advantage of short take-off and landing capability, high fuel & payload capacity, low maintenance cost, economical fuel consumption, high cruising speed in its class.

Sky is the limit

Modi's 'Make in India' dream will get a boost when HAL begins manufacturing the indigenous helicopter, ALH Dhruv (Civil version).
HAL has built 12 ALH Dhruv Civil variant helicopters and are being operated by Government of Jharkhand and BSF.

Drone, Dusted

Karnataka's unmanned aerial systems or drone policy will be out this year making it the first state in the country to use UAS applications extensively in its departments. Aeromodellers are demanding that a separate category be created within the UAV Classifications, for model aircraft strictly for sports and recreational and educational purposes (excluding, if necessary, all types of multi-rotors and drones) limited to non-commercial use only.

Published in:
Banglore Mirror

Public Lecture on 'Space Exploration; Do We Need Man in Space' at NIO on Jan1

CSIR-NIO

1st January, 2018

Public lecture on 'Space Exploration; Do We Need Man in Space' at NIO on Jan 1

Panaji, Dec 29 (UNI) Eminent scientist Dr P S Goel, Dr Raja Ramanna Chair Professor at National Institute of Advanced Studies (NIAS) and Honorary Distinguished Professor, at Indian Space Research Organisation (ISRO) HQ, Bengaluru, will deliver a public lecture on "Space Exploration; Do We Need Man in Space?" at CSIR-National Institute of Oceanography (NIO), Dona Paula, here on January 1, 52nd Foundation Day of NIO.

According to a statement from NIO, the talk will discuss issues related to man in space that include science, technology, national pride and image. Dr Prem Shankar Goel graduated in Engineering from the University of Jodhpur. He started his career by joining the Indian Space Research Organization, Thiruvananthapuram, in the project for Satellite Altitude Control System for spinning RS-1 satellite but later shifted to the Bengaluru centre to join the Aryabhata (satellite) team.

Over the years, Dr Goel had served as the chairman of the Spacecraft System Advisory Board for IRS-1, the project engineer of the Attitude and Orbital Control Subsystem of the Ariane Passenger Payload Experiment, prior to his retirement from ISRO. Dr Goel is credited with the development of the spin axis orientation system for Bhaskara I and Bhaskara II satellites and the magnetic control for spinning satellites, the statement added.

Published in:
UNI India

Take Neeri achievements to people, say top ex-bosses

CSIR-NEERI

1st January, 2018

Nagpur: The alumni of National Environmental Engineering and Research Institute (Neeri) should take its accomplishments further to benefit the society, vis-a-vis the country, said Tapan Chakrabarti, former acting director, on Friday. The two-day diamond jubilee and alumni meet celebrations of CSIR-Neeri were inaugurated jointly by former acting directors JM Dave, SN Kaul and Tapan Chakrabarti. Rakesh Kumar, current director, and Pawan Kumar Labhsetwar, senior principal scientist and head, water technology and management division (WTMD), were present.

A diamond jubilee and alumni meet directory giving details of the institute and the alumni was also released on the occasion. The celebrations saw various sessions being held on future prospects of the institute comprising group activities, discussions and networking among experts for advancing the Neeri alumni synergy. Presentations were given on various feats achieved by Neeri and its upcoming projects. A panel discussion on 'CSIR-Neeri's Vision 2022' and 'What alumni can do for or along with Neeri?' was held to identify future research needs in which the current and former officials took part. Chakrabarti said there is a need to revisit and re-validate the numerous technologies developed by the institute since its inception. The alumni play a pivotal role and their involvement, accompanied with advancements in science, can work wonders for the development of the nation. Scientists must also pay attention to communication skills with the aim of producing quality technical reports and highlight their hard

work in an effective manner, added Chakrabarti. The former directors shared their experiences on various aspects related to environmental science and engineering. Dave briefed about his role in the formation of Central Public Health Engineering Research Institute (CPHERI) and his vision for air pollution control in the country. "With the country facing air pollution, immediate action is the need of the hour and Neeri can make a lot of difference with research work," Dave added.

Kaul emphasized the need to propagate technological developments of the institute among the people as they are the ultimate beneficiaries. He advised the scientists to relate every environmental problem with a solution. Briefing about the evolution of Neeri, Kumar said, "The institute has taken up the task of sustainable urban and skill development and upgradation. Neeri will play a major role in wasteland development, rejuvenation of water bodies and waste management and remediation in the country."

Published in:
Times of India

CSIR-IHBT

29th December, 2017

जैव विविधता दिवस पर विशेष 56 जड़ी-बूटियां खतरे में, प्रदेशभर में पाई जाती हैं 3500 पुष्पी पौधों की प्रजातियां

लालच पी गया जड़ी-बूटियों का अर्क

जागरण संवाददाता, पालमपुर : प्रदेश में औषधीय गुणों वाली 56 प्रकार की जड़ी-बूटियों की प्रजातियां खत्म होने की कगार पर हैं। यह खुलासा काउंसिल ऑफ साइंटिफिक एंड इंडस्ट्रियल रिसर्च-इंस्टीट्यूट ऑफ हिमालयन बायो रिसोर्स टेक्नोलॉजी (सीएसआइआर-आइएचबीटी) के तहत जुटाए गए आंकड़ों से हुआ है।

सीएसआइआर जैव विविधता के संरक्षण एवं विकास पर कार्य कर रहा है। प्रदेश में करीब 3500 पुष्पी पौधों की प्रजातियां हैं और इनमें से 800 औषधीय गुणों के लिए जानी जाती हैं। खतरे के निशान पर पहुंची 56 जड़ी-बूटियों के कम होने का कारण इनका अवैज्ञानिक तरीके से लगातार हो रहा दोहन है यानी लालच के चक्कर में इनका जमकर दोहन किया जा रहा है। संस्थान ने हिंफ्लोरिस नामक डेटाबेस विकसित किया है और इसमें प्रदेश में किस तरह की जड़ी-बूटियां हैं और ये कहां-कहां पाई जाती हैं, का पूरा ब्योरा है। वैज्ञानिकों की मानें तो इन जड़ी बूटियों में कडू, नागछतरी, पतीस, जंगली लहसुन, गुच्छी व जंगली अजवाइन सहित अन्य हैं।

इस तरह काम कर रहा संस्थान

ऐरोमा मिशन : इस मिशन के तहत सुगंधित पौधों की खेती को बढ़ावा दिया जा रहा है ताकि इनका इस्तेमाल इतर बनाने में किया जा सके।

औषधीय संबंधी मिशन : संस्थान औषधीय गुणों वाले पौधों का संरक्षण कर रहा है। इसके लिए प्रयोगशालाओं में इनकी पौध तैयार करने पर काम होता है।

न्यूट्रीशनल फूड एज मेडिसिन : खाद्य पदार्थों के औषधीय गुणों के आधार पर उनसे विभिन्न प्रकार के खाद्य पदार्थ तैयार किए जा रहे हैं ताकि हड्डियों व जोड़ों के दर्द का निवारण किया जा सके।

फ्रूट टेक्नोलॉजी : फ्रूट टेक्नोलॉजी के जरिये किसी भी फल को क्रिस्प रूप ड्राइ फ्रूट की तरह दिया जाता है ताकि पोस्ट हार्वेस्ट का नुकसान न हो और फल की मूल्यवृद्धि हो सके। कुपोषण निवारण के लिए न्यूट्रीवार व अन्य खाद्य पदार्थ बेहतरीन हैं।

खाद्य विविधता : विभिन्न खाद्य पदार्थों को गुणों के आधार पर वैज्ञानिक नई तकनीकों को कंपनियों के माध्यम से लोगों तक पहुंचाते हैं।

'संस्थान का उद्देश्य जैव संसाधनों से जैव आर्थिकी को बढ़ावा देना है ताकि सामाजिक, आर्थिक व पर्यावरण का विकास हो सके। जैव विविधता पर संस्थान की ओर से विभिन्न स्तरों पर काम किया जा रहा है। जड़ी-बूटियों के संरक्षण के लिए विशेष प्रयास किया जा रहा है। अभी तक 56 जड़ी-बूटियां ही खतरे में हैं। संस्थान पांच लक्ष्यों पर काम कर रहा है।'

-डॉ. संजय कुमार, निदेशक
सीएसआइआर-आइएचबीटी

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