



CSIR IN Media

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Top research lab to help farmers with new crops

CSIR-CIMAP

The Central Institute of Medicinal and Aromatic Plant (CIMAP), a frontal research laboratory of CSIR, aims to help farmers in areas where agriculture is rain-fed by empowering them with crops which require very little water, that too only at the time of plantation. CIMAP has crop recommendation for every state depending on weather conditions as lack of sufficient rains does not result in failure of these crops.

Addressing the media, Anil Kumar Tripathi, director of CIMAP, recommended aromatic plants like lemongrass, pamarosa for Vidarbha. These oils have demand from industries all over the world. The only need is to set up distillation units for immediate extraction of oils. Tripathi said, "Initially we are taking things in our hands and setting up distillation units with our funds for cluster of farmers. Once the people start tasting success, they can do it themselves with the help of bank loans. We will also provide the farmers with the list and of buyers and their contacts for easy marketing of these crops", he said.

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CIMAP is ready with 3 lakh seeds of high-yielding varieties of these crops and plans to plant them in 120 acres of land by July end. CIMAP also recommended medicinal crops like ashwagandha, shatavari and senna in Vidarbha. FDA has approved use of ashwagandha for making dietary supplements which has huge demand in India and in other countries. Shatavari (asparagus) is beneficial for women and also has huge demand in dairy industry as it helps increase milk output and lactation in milch animals. Senna crop has rate 4 lakh per hectare and it does not require much care. Senna has laxative properties and is one of the most exported crops.

Both ashwagandha and senna grow well even in dry areas which makes Vidarbha a potential market for these crops. Tripathi said, "Presently, the Chinese system of medicinal plants has great demand in global market not because it is superior to Indian produce but because its has promoted traditional medicines effectively and also due to international politics. Now India has an opportunity to promote its system with America trying to root its market here and we are trying to exploit this opportunity and defend Indian medicines."

CIMAP has done remarkable work by making India self-sufficient in the production of 'mentha' which it had to import 30 years back. CIMAP also successfully cultivated artemisia crop from which the most effective drug against malaria is produced and used to curb the disease in India and Africa.

<http://timesofindia.indiatimes.com/city/nagpur/Top-research-lab-to-help-farmers-with-new-crops/articleshow/53106189.cms>

Siddhi Jadhav | TNN | Jul 8, 2016

Omega-3 rich vegetarian ice creams enter the market

CSIR-CFTRI

Ice Creams are largely consumed as a heat buster and energy booster. Now a Bengaluru-based company plans to add a nutrition value to it. Bengaluru-based Oleome Biosolutions along with Dairy Classic Ice Creams Private Limited has developed Omega-3 and Vitamin E enriched ice creams.

Omega-3 fats are generally associated with fish and not favourable to the taste pallets of vegetarian. However, the Central Food Technological Research Institute (CFTRI) has developed a vegetarian version of the same using chia seeds. The chia seeds developed by CFTRI are a white variety.

"Internationally, black chia variety is used. The gamma irradiated black chia seeds were grown and selected for the white chia seed bearing plants rich in Omega 3 fats. This was then distributed to 1,200 farmers in Karnataka by a farmer produce company Raita Mitra," said, Ram Rajasekharan, director CFTRI.

The oil from the seeds was extracted and stabilised by Oleome Biosolutions. The oil could be stabilized only in cold temperature and hence it was added as an ingredient in ice creams by Dairy Classic Ice Creams Private limited. To stabilize the oil further vitamin E was also added to it. The combination of Vitamin E and Omega-3 oil makes the product very good for the heart.

The NutriIce Creams was launched on Tuesday after about four years of research and development. It will be available at Polar Bear Ice Cream outlets in all flavours.

While ice creams are the first step, CFTRI plans to use the white chia seeds further and develop more products that are Omega-3 fats rich. "A huge number of people are deficient in Omega-3 as they are vegetarians. We are now working on making the vegetarian version of the Omega-3 become a common ingredient in all basic food items. This will not only ensure good health for people but also encourage farmers to grow it widely," added, Rajasekharan.

http://www.business-standard.com/article/companies/omega-3-rich-vegetarian-ice-creams-enter-the-market-116070600395_1.html

Apurva Venkat | Bengaluru | July 6, 2016

Now, corp banks on NIIST to manage waste

CSIR-NIIST

Offering a solution to the garbage issue in the city, CSIR's National Institute for Interdisciplinary Science and Technology (NIIST) has developed an anaerobic digester to convert household organic kitchen waste to biogas. The technology will be utilized by the city corporation as part of its 'My City, Beautiful City' drive. A company based in Pune had approached the NIIST for the technology transfer and it was handed over on Monday.

The technology was developed by the NIIST team led by senior scientist V B Manilal. "Each anaerobic digester has a capacity to convert up to 3kg biodegradable kitchen waste per day, which will be converted to 400 litre biogas which can be used as fuel. In the process it will discharge about 2.5 litre manure which can be used for kitchen garden. It would cost around Rs 25,000," Manilal said.

It will be available for purchase at two centres in the city - at Poojapura and at Pappanamcode.

Mayor V K Prasanth, who visited NIIST and personally examined the equipment, said that this technology will be a great help to the corporation for its venture of clearing the waste at source level.

"Biodegradable waste from kitchen contribute significantly to pollution, which demands immediate management and treatment. Treatment of biodegradable waste in traditional aerobic digester creates foul smell and leachate discharge. A refined household wastes treatment mechanism is the need of the hour since the present municipal treatment plants suffer from many demerits. Therefore, anaerobic digester of NIIST is a suitable option for the effective treatment of biodegradable wastes at source," said NIIST director A Ajayaghosh.

On Monday, the anaerobic digester technology of NIIST was transferred to Pune-based Mailhem Ikos Environment Pvt Ltd, a global waste management conglomerate offering customized solutions in solid waste and waste water treatment and management. The company plans to develop the product at its unit in about two months.

O Rajagopal, MLA, and ward councillor Vijayan were present at the function held at NIIST on Monday to transfer the technology.

<http://timesofindia.indiatimes.com/city/thiruvananthapuram/Now-corp-banks-on-NIIST-to-manage-waste/articleshow/53055846.cms>

Laxmi Ajai Prasanna | TNN | Jul 5, 2016

NCL scientist bags research grant

CSIR-NCL

Kiran Kulkarni, a senior scientist at the Council for Scientific and Industrial Research's (CSIR) National Chemical Laboratory (NCL), has received the prestigious competitive research grant through the collaborative research programme International Centre for Genetic Engineering and Biotechnology (ICGEB).

The grant is for a project led by him titled 'Structural basis of Dock3-NEDD9 interactions and their role in tumour cell plasticity'.

A statement issued by NCL said Kulkarni is the first scientist from CSIR to have secured this standalone (non-collaborative, single principal investigator) grant since its inception in 1988. The grant involved a three-tier selection process. Kulkarni's project ranked in the top 10% to get selected.

Kulkarni has been working with CSIR-NCL since March 2013 in the biochemical sciences division. He has done a PhD in molecular biophysics from Indian Institute of Science, Bengaluru.

The programme aims to stimulate collaborative research in member states and with the ICGEB Component laboratories, to promote training of young scientists and facilitate the creation of appropriate research facilities. It provides support for research projects in basic science, human healthcare, industrial and agricultural biotechnology and bioenergy.

<http://timesofindia.indiatimes.com/city/pune/NCL-scientist-bags-research-grant/articleshow/53088329.cms>

TNN | Jul 7, 2016

Kerala: NIIST tech for titanium plants

CSIR-NIIST

As many of the titanium dioxide plants turn into toxic hotspots polluting environment with acid effluents, CSIR-NIIST here offers an environment-friendly alternative. On Thursday, the institute signed an MoU with a Chennai-based mining company to demonstrate the process in pilot plant scale.

Normally, companies resort to acid leaching to remove iron oxide from ilmenite to make it richer in titanium dioxide. However, the iron oxide will be acidic, and in some processes, there will be chloride contamination.

There have been cases where companies have created pits to dump the acidic byproduct, but the slurry would leak into nearby water bodies. They are finding it increasingly difficult to dispose of iron oxide, as more of it is produced every year.

The CSIR-NIIST process removes iron oxide using a rotary kiln. It is only to remove the last traces of iron oxide that a small quantity of acid is used.



Harikrishna Bhat, the scientist who led the team which developed the technology, says, “The cost of production is estimated to reduce by 60%. But more than the cost factor, its most important aspect is environment friendliness.” The agreement was signed in the presence of CSIR-NIIST director A. Ajayaghosh and VV Minerals director V. Subramanian.

“The technology has a lot of potential in Kerala itself,” says Mr Ajayaghosh.

The process in laboratory scale and semi-pilot plant scale has produced titanium feedstock with 92% titanium dioxide. Now CSIR-NIIST will partner with VV Minerals in the demonstration of the process on a plant scale.

When the pilot plant of a suitable capacity, say 400 tonnes, produces the required quantity of synthetic rutile it will be sent for test marketing and customer feedback. If the process is successful, the institute will assist the company in demonstrating the process in a larger commercial plant scale

<http://www.deccanchronicle.com/lifestyle/pets-and-environment/080716/kerala-niist-tech-for-titanium-plants.html>

July 8, 2016

8 Scientists From India To Watch

From the mysteries of deep space to the molecular mechanisms of our very cells, India's scientists are breaking new ground everyday.

India is going into space in a big way. Hot on the heels of the discovery of gravitational waves earlier this year, the Indian Cabinet has granted in-principle approval to the Laser Interferometer Gravitational-wave Observatory Project in India to pinpoint and analyze the sources of gravitational waves.

The LIGO-India Project brings together three of the country's top research institutes—the Inter-University Center for Astronomy and Astrophysics, the Raja Ramanna Center for Advanced Technology and the Institute for Plasma Research—to build an Advanced LIGO Observatory in India, much like the one in North America where scientists made the historic discovery.

In the face of excessive space spending, India is also admirably resourceful. The nation has built and launched an entire satellite navigation system on a tight budget of US\$350 million. A similar project in Europe, on the other hand, costs governments billions of euros.

Back on Earth, India is a heavyweight in the international science and technology research arena, thanks in part to the efforts of its Department of Science and Technology in promoting and supporting research. Here, we feature a handful of Indian scientists that are breaking new ground in space, biomedical science, pharmaceuticals and beyond.



K. Radhakrishnan

Radhakrishnan is the recently retired chairman of the Indian Space Research Organisation (ISRO). He spearheaded India's Mangalyaan mission, the first Asian space probe to successfully orbit Mars. Radhakrishnan was named by Nature magazine as one of the ten people who mattered in 2014. That year, he also received the Padma Bhushan award, India's third highest civilian award. He is chairman of the Indian Institutes of Engineering Science and Technology and the Indian Institute of Space Science and Technology.



**C.L. Lakshmipathi
Gowda**

Gowda, deputy director-general of the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), received the 2014 Sano Touzaburo Special Prize—"Asia's World Food Prize"—for developing chickpea cultivars with high yield and resistance to diseases and pests.



Satyajit Mayor

Mayor, director of India's National Center for Biological Sciences (NCBS) was elected as foreign associate of the US National Academy of Sciences in 2015 for his work on the molecular mechanisms of endocytosis in metazoan cells.



Surendra Shashtri

Apart from his work as co-founder of the Advocacy Forum for Tobacco Control and director of the Smokefree Mumbai Campaign, Shastri has developed a highly effective and low cost screening method for cervical cancer based on vinegar. The results of the 12-year study involving over 150,000 women showed that the screen could help reduce cancer deaths by 31 percent, all at the cost of just 30 rupees per test.



**Kiran Mazumdar
Shaw**

Mazumdar-Shaw won the Kiel Institute's 2014 Global Economy Prize for Business for growing Biocon into one of India's largest biopharmaceutical companies.



**Srivari
Chandrasekhar**

Chandrasekhar won the Infosys Prize 2014 in Physical Sciences for his research into the synthesis of complex molecules from natural sources and was appointed director of the CSIR-Indian Institute of Chemical Technology (IICT) in 2015



C.N.R. Rao

Rao was conferred with the Order of the Rising Sun, Gold and Silver Star, Japan's highest civilian award, for his contributions to science and Indo-Japanese science cooperation. He is the only Indian to be elected as a foreign member of the Japan Academy.



M.R. Srinivasan

The chief architect of India's nuclear power program won the 2015 Padma Vibhushan Award, India's second highest civilian award.

<http://www.asianscientist.com/2016/07/features/8-scientists-from-india-to-watch/>

Nurfilzah Rohaidi | July 5, 2016