

CSIR in Media



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A Daily News Bulletin
11th - 12th April 2017



Chia: your daily dose of happiness

CSIR-CFTRI

11th April 2017



Chia is one of the richest sources of plant based omega-3 fats for vegetarians. It is estimated that the cultures who have been consuming Chia as part of their regular diet do better than others in mental health.

Depression has not been taken with much seriousness for long, due to social stigma or lack of awareness and diagnosis but is now an acknowledged malady that affects growing numbers of people across the world.

In a mental health survey released by the National Institute of Mental Health and Neurosciences, one in every 20 Indians suffers from some form of depression. Not just that, as a country India was ranked 122nd in

World Happiness Report released last month. If more evidence were needed, the UN has declared Depression as the theme of World Health Day 2017.

Depression can be due to various reasons ranging from endogenic to environmental causes. Sometimes environmental situations can trigger a genetic predisposition and cause the onset of depression. However, there is now growing agreement that food plays a significant role in brain chemistry. A good food selection with the right quantities and combinations of food groups helps in better wellness resulting in effective ability to handle and recover from stresses..

Being happy goes hand in hand with optimum cognitive performance, and although one cannot alter the environmental stress one is exposed to, consistent low-intensity stresses of day to day life is often a challenge experienced by all. However, right foods prevent the onset of depression or help alleviate depression. According to growing consensus in the scientific and nutrition community, Omega-3 fats are an effective nutrient in our diet that provides adequate protection against depression. Foods rich in omega-3 are fish and a few plant produce. Chia is one of the richest sources of plant based omega-3 fats for vegetarians. Omega-3 fats have shown a positive role in improving mood in people suffering from depression. It is estimated that some cultures who have been consuming foods such as Chia as part of their regular diet do better than others in mental health. Chia is an ancient grain and was an essential part of the Aztec culture with a presence in their religious practices, daily food and special foods as well as food for the ancient Aztec warriors. Over the centuries, witnessing many a military invasion, the crop lost its presence and was revived only in the recent past. Chia seeds occurs in nature in black, mottled and white forms with white seeds having an edge over the rest. Due to its high import costs, superfoods have been inaccessible to a majority of consumers in India, leave alone the common man. However all that may be about to change. India's premier nutrition research development organisation, Central Food Technology Research Institute, has developing agro-technologies to grow superfoods in Indian conditions, and as a pilot programme provided Chia seeds for free to Indian farmers. CFTRI has developed blue flower, white seed Chia lines which blend seamlessly into foods, which have a better market globally. Farmers from across the nation have benefited with better incomes due to the seeds they received and cultivated with CFTRI agro-technology.

Chia seeds do not require post-harvest processing and can be directly consumed after cleaning. It is highly versatile and can be consumed by adding to our daily foods. Chia upon adding to water becomes a gel that is easy to drink. One can add about 3-gram Chia to a glass of water and allow the water to rest for about 10 minutes; the seeds form a transparent gel that can be easily consumed. Seeds can blend well in into fruit juices, smoothies, shakes, buttermilk, puddings and bakery products like bread and cakes. The neutral taste of the seed helps in seamless blending into all food products. On an average, an adult needs about 1-1.6 gram of omega-3 fat daily and that can be met by simply having 1 teaspoon of chia seeds dissolved in water or in any other form.

One of the main focus of CFTRI's work on superfoods like Chia is to make it easily available and affordable to Indians at large so that it can gain the currency of a staple like a dal or pulses of everyday use.

Published in:

[MilleniumPost](#)

'Learn from China on how to make energy from waste'

CSIR-NEERI

11th April 2017

Even after 16 years of municipal solid waste rules being in place and India spending more than Rs10,000 crore in treatment of waste, not a single municipal corporation out of the 8,000 in the country can claim to manage solid waste in the best possible way.

This was one of the major points that came up for discussion on the first day of the international conference on 'Integrated solid waste management practices in developing countries'. Jointly organized by National Environmental and Engineering Research Institute (Neeri), Government Institute of Science, Nagpur, and Government Institute of Forensic Science, the conference was held under the aegis of Clean India

Mission initiated by Prime Minister Narendra Modi.

Nickolas Themelis, founder and director of the Earth Engineering Center at Columbia University and the Global Waste to Energy Research and Technology Council, participated in the conference through a webinar. "The generation of waste in Asian and African countries has trebled since 1950 and will further increase by six times by 2030," said Themelis.

Stating that most of the Asian municipal solid waste is landfilled, Themelis said, "If we were to dump the global municipal waste at one landfill, we would use up a land surface equal to metropolitan Paris," he added.

Another consensus was on India being in a good position to form technical and economic partnership with China to start phasing out landfilling. "China has around 200 waste-to-energy plants running successfully, releasing less dioxin emissions. India should decide to grow in the same way," experts said.

Presenting a critique on the amended Municipal Solid Waste Rules, 2016, Asit Nema, an independent consultant and environment engineer, called them impractical and utopian. "The new rules prohibit disposal of organic in landfills but mandate installation of landfill gas collection, making the implementation part more difficult," said Nema.

Despite a large number of treatment plants becoming dysfunctional, the rules still show preference for technology. Added Nema, "Too much focus on treatment won't take us anywhere. No outcomes are defined in terms of environment and public health."

Thomas Gross and Lena Breitenmoser from the University of Applied Sciences and Arts Northwestern Switzerland (FHNW) presented a case study on city's Kalamna market and found biodegradable waste generated from the vegetable and fruit market to be a source for anaerobic digestion and biogas production. "Per year, 6,278 tonne of waste is generated from the Kalamna market which is going to a landfill. Preliminary results show promising potential for generating biogas," they said.

Published in:

[TOI](#)

CSIR-CIMAP

9th April 2017

अप्रैल से मई तक³ करें तुलसी की खेती

तुलसी का तेल 400 से 500 रुपए प्रति लीटर बिकता है



फोटो: गाँव कनेक्शन

70 से 80 दिन में तैयार
हो जाती है सिग्धा तुलसी

लखनऊ स्थित केन्द्रीय औषधीय एवं सगंध अनुसंधान संस्थान (सीमैप) ने कम समय में तैयार होने वाली तुलसी की किस्म सिम सिग्धा तुलसी तैयार की है। यह किस्म 70 से 80 दिन में तैयार हो जाती है। सिम सिग्धा तुलसी में अन्य किस्मों की तुलसी की तुलना में अधिक औषधीय गुण पाए जाते हैं। तुलसी के बाजार में सिम सिग्धा तुलसी का तेल लगभग 600 रुपए प्रति लीटर के भाव से बिकता है।

तुलसी की इस नई किस्म के बारे में केन्द्रीय औषधीय एवं सगंध अनुसंधान संस्थान (सीमैप) के वैज्ञानिक संजय कुमार बताते हैं, 'संस्थान ने सिम सिग्धा नाम की तुलसी की किस्म तैयार की है, इस प्रजाति के तेल में 78 प्रतिशत से अधिक मिथाइल सिनामेट पाया जाता है, जिसका उपयोग एरोमा, फार्मास्यूटिकल और कास्मेटिक उद्योग में होता है। साथ ही इसके सेवन से मधुमेह, मोटापा और तंत्रिका विकार के इलाज में इसका उपयोग किया जाता है।'

Published in:

Gaon Connection, Page 3

CDRI bid to motivate students

CSIR-CDRI

9th April 2017

PIONEER NEWS SERVICE IN LUCKNOW

In continuation of CSIR-CDRI's mission to promote experimentation and innovativeness in education and bring confidence to the society about the relevance of the Institute in terms of social impact under the CSIR-800 programme, a motivation programme was organised at CSIR-CDRI on the occasion of World Health Day for the students of B Pharma along with their faculties from the Shambhunath Institute of Pharmacy, Jhalwa, Allahabad, on April 7, 2017.

Its major objective was to motivate the young students for pursuing a career in science and explore the recent knowledge of drug discovery and research. During the motivation programme Dr Sanjeev Yadav briefed about the achievements of CSIR-CDRI and the objective of celebrating World Health Day. He further said that depression was on top of the list of causes of ill health hence the World Health Organisation (WHO) declared the theme of the year as 'Depression: let's talk.'

According to the latest estimates from WHO, more than 300 million people are now living with depression, an increase of more than 18 per cent between 2005 and 2015. Lack of support for people with mental disorders, coupled with a fear of stigma prevent many from accessing the treatment they need to live healthy, productive lives.

Further the students and faculties visited the exhibit of achievements of CSIR-CDRI and various labs. In the Pharmaceutics Division, Dr Amit Mishra interacted with the students and talked about the basics and advance research in the field of pharmaceutics. Dr Wahazuddin, discussed the various research aspects of Pharmacokinetics and Metabolism. In the Pharmacology Division Dr Anil Gaikwad interacted with the students and faculties and briefed them about the recent advances in drug discovery and development and motivated the former for pursuing a career in science.

Dr RK Singh talked about the importance of toxicological studies in drug development. Students and faculties have taken a glance of hands-on working for drug development in various labs personally and interacted with the research students too.



Concern over rise in depression cases

Lucknow (PNS): Cases of depression have seen an unprecedented uptick over the last decade in Lucknow. Over 12 per cent of the total population in the state capital is in the grip of depression and the mental disorder is more common among women than among men.

This was stated by head of the Geriatric Mental Health department of King George's Medical University (KGMU) Dr SC Tiwari while delivering a lecture organised by Indian Medical Association (Lucknow) at IMA Bhawan on Friday. The programme was organised on the occasion of 'World Health Day' and themed on depression.

"Over five crore people suffer from depression. The need of the hour is to pay attention to the cure of this disease before it becomes an epidemic. A huge population in the state capital is in the grip of depression. The problem is more pronounced in women and higher number of women are being diagnosed with it. A large group of patients could not get treatment either due to social stigma or lack of awareness. The cure for this problem is possible and a patient can live a normal life after treatment," Prof Tiwari said.

"People in 15-35 year age group are more severely affected with the problem of depression. It negatively impacts their productivity and physical health in the longer run," he stressed.

Analysing the rise in number of suicides, consultant psychiatrist Dr Mohd Aleem Siddiqui said: "The Central government has recently passed Mental Health Bill under which suicide has been kept out of the category of crime. Suicide is the last stage of depression and with timely treatment, a patient could be saved from going to such an extreme. It is important to listen carefully to patients having suicidal thoughts and through planned counselling sessions along with anti-depressants, a patient's willingness to live could be raised."

Besides, renowned psychiatrist Dr Sashwat Saxena suggested symptoms to identify if a person suffers with depression. "Though we all get dissatisfied and unhappy with life, depression is deeper, more intense and prolonged than such dark phases. It leads to sharp decline in one's willingness to live and interest in day-to-day activities," he said.

Published in:

Pioneer

CSIR-CDRI

10th April 2017

'मोहब्बत में दिल टूटे तो रो कर दूर करें डिप्रेशन'

वर्ल्ड हेल्थ डे KGMU में हुई कॉन्फ्रेंस

300 मिलियन डिप्रेशन का शिकार

स्वीडिश-स्वीडीश-स्वीडीश, लखनऊ में शंभुनाथ इंस्टिट्यूट और फार्मसी इन्स्टिट्यूट के छात्रों के लिए अभिप्रेषण कार्यक्रम हुआ। इस अवसर पर स्वीडिश-स्वीडीश में एक कॉन्फ्रेंस भी हुई। कार्यक्रम में डॉ. संजीव खन्ना ने 'डिप्रेशन : लेट्स टॉक' सबजेक्ट पर स्टूडेंट्स को संबोधित करते हुए कहा कि विश्व स्वास्थ्य संगठन ने अक्सर को सबसे स्वास्थ्य के कारकों की सूची में शीर्ष स्थान पर रखा है। डब्ल्यूएचओ के ताज़ा आंकड़ों के अनुसार विश्व में 300 मिलियन से अधिक लोग डिप्रेशन में जीवन जी रहे हैं। कार्यक्रम में डॉ. वसन्तकुमार, डॉ. अमित मिश्र, डॉ. आरके सिंह, शंभुनाथ इंस्टिट्यूट के निदेशक मनेज कुमार मिश्र, अनिल गणकवाड़ ने भी संबोधित किया।

17% बढ़ा आत्महत्या का आंकड़ा

एसेसिएट प्रोफेसर और सइकेटी डॉ. अनीम ने बताया कि भारत में 2015-16 में हुए एक सर्वे में सामने आया कि बीस में एक भारतीय अक्सर से पीड़ित है। इसको अगर कम करने का प्रयास नहीं किया गया तो यह स्थिति भविष्य में और भयावह हो सकती है। डॉ. अनीम ने बताया कि बीते दस सालों में भारत में आत्महत्या 17 प्रतिशत बढ़ गया है। नेशनल ब्रदम व्यू के रिपोर्ट्स के अनुसार पिछले साल भारत में 1.33 लाख व यूए में 3902 मौत हुई है। युवाओं की संख्या सबसे ज्यादा है। इनमें पढ़ाई से लेकर कैरियर बनाने की चिन्त में डिप्रेशन का शिकार युवा शामिल थे।

विश्व में 4.3% लोग अक्सर का शिकार

विश्व स्वास्थ्य संगठन (डब्ल्यूएचओ) की ओर से डिप्रेशन ऐंड अदर कॉमन मेटल डिप्रेशन से जुड़े नवीनतम रिपोर्ट के अनुसार दुनिया भर में 30.22 करोड़ लोग मानसिक तनाव या उससे मिलती जुड़ती चीजों का शिकार हैं। यह आंकड़ा विश्व की कुल जनसंख्या का 4.3 प्रतिशत है। उन 30.22 करोड़ में डिप्रेशन के लगभग 50 प्रतिशत लोग भारत, चीन और पश्चिमी प्रशांत क्षेत्र या साउथ ईस्ट एशियन क्षेत्र में पाए जाते हैं।



Published in:

Navbharat Times

Also Published in:

Hindustan

CSIR

11th April 2017

Dinesh Sarraf on CSIR Board



ONGC Chairman and Managing Director Dinesh K Sarraf has been appointed as member of the prestigious governing body of Council of Scientific and Industrial Research (CSIR).

He has been nominated to the governing body of CSIR for a period of three years. The governing body is the apex body of CSIR for all decision making processes.

CSIR is a leading scientific R&D organisation set up with a mandate to promote guide and coordinate scientific and industrial research in the country with 38 R&D labs.

Published in:

Statesman

Also Published in:

[Business Standard](#)

[GovernanceNow](#)

[MilleniumPost](#)

[NewIndianExpress](#)

[IndiaToday](#)



Dr. Arabinda Chaudari, Chief Scientist of Chemical Biology Division elected as Fellow of Royal Society of Chemistry (FRSC).

CSIR-IICT

11th April 2017

రాయల్ సొసైటీ ఆఫ్ కెమిస్ట్రీ ఫెలోషిప్ కు అరబింద

హైదరాబాద్, ఏప్రిల్ 10(ఆంధ్రజ్యోతి): సీఎస్ఐఆర్-ఐఐసీటీకి చెందిన ప్రముఖ శాస్త్రవేత్త డాక్టర్ అరబింద చౌదరికి అరుదైన గౌరవం దక్కింది. యూకేకు చెందిన రాయల్ సొసైటీ ఆఫ్ కెమిస్ట్రీ ఫెలోషిప్ కు ఆయన ఎంపికయ్యారు. అరబింద చౌదరి హైదరాబాద్ లోని ఐఐసీటీ కెమికల్ బయాలజీ విభాగం ముఖ్య శాస్త్రవేత్తగా విధులు నిర్వర్తిస్తున్నారు. రసాయన శాస్త్రం, జీవశాస్త్రంలో ఆయన చేసిన విశిష్ట పరిశోధనలు, అందించిన సేవలకుగానూ ఫెలోషిప్ కు ఎంపికయ్యారు.



Published in:

Andhra Jyoti

Also Published in:

Eenadu, Namaste Telangana, Sakshi

Chalk circle

CSIR-CGCRI

6th March 2017



There's a new, safer antacid on the horizon for heartburn patients. Prasun Chaudhuri spoke to the Calcutta scientists who designed it

When heartburn hits, it's tempting to pop a pill. A growing body of research, however, suggests that the drugs favoured now to relieve acidity come with worrying side effects. A new antacid may make the adverse effects a thing of the past. A group of researchers in a Calcutta lab has already tested it successfully on animals; human trials will start in a city public hospital soon.

Antacid medication is basically of three types - proton-pump inhibitors or PPIs (omeprazole, rabeprazole, pantoprazole, esomeprazole and the like), histamine₂ (H₂) receptor blockers (ranitidine, famotidine, cimetidine, nizatidine) and the earlier generation chewable, liquid or effervescent antacids, which contain aluminium hydroxide, magnesium hydroxide [commonly known as milk of magnesia] or sodium bicarbonate [baking soda].

Research has shown that PPIs have numerous side effects, from deadly infections in the stomach and impaired vitamin absorption, to an increased risk of kidney disease, heart attack and even dementia. While H₂ blocker drugs are known to spark off headaches, constipation and nausea, their long-term use has not been studied as extensively as that of PPIs. Old-fashioned antacids have milder effects like constipation, diarrhoea or, in worst cases, acid rebound.

"The new drug molecule we have designed is on the lines of these drugs, but more effective and with minimal side effects," says Jui Chakraborty, a senior scientist at the Central Glass & Ceramic Research Institute (CGCRI) at Jadavpur, a lab under the umbrella of the Council of Scientific and Industrial Research (CSIR). "It is a potent, inorganic, ceramic-based antacid, providing instant relief," she added.

The stomach produces hydrochloric acid of industrial strength, similar to that used to remove rust from steel. The acid plays a key role in the digestion of proteins, by activating digestive enzymes in the stomach. "The acid also kills harmful bacteria ingested with contaminated food," says Dr Goutam Das, head, department of gastroenterology at AMRI Hospitals. To ensure that the fluid in the stomach does not become too acidic, the stomach produces a bicarbonate (a base) as buffer. "The right level of acid [measured on the pH scale] needs to be maintained in the stomach for proper digestion," he adds.

A faulty or irregular diet, physical and mental stress as well as lack of sleep can cause over-production of acid in the stomach. Spicy and greasy foods can also increase acid production, as can excessive consumption of fibre, which takes longer to digest, leading to greater acid production.

This excess acid can lead to an upset stomach, bloating or other intestinal problems. "Many people experience acid reflux when some of the acidic contents of the stomach go back up into the oesophagus creating a burning pain (heartburn) in the lower chest area after meals," says Dr Das of AMRI. The corrosive action of excess acid may also burn the stomach, causing peptic ulcers.

Chalk (calcium carbonate) has been chewed for centuries to counter acidity. Ancient physicians also prescribed different inorganic ceramic compounds such as calcium carbonates or milk of magnesia. The older proprietary antacids - the effervescent sodium bicarbonates (or baking soda, a grandmother's remedy for tummy aches) and aluminium hydroxides - neutralise excess stomach acid after it's secreted. The new drug acts in much the same way.

"This earlier generation of antacids have a local action, unlike the proton-pump inhibitors and H₂ blockers," says Siddhartha Bandyopadhyay, head of bioceramics and coating division at CGCRI. The newer drugs go through the liver to mix in the blood and stop acid secretion. If the patient has high-blood pressure or diabetes and is on medication for them, then PPIs and H₂ blockers put extra pressure on the liver.

In addition, since these newer drugs stop the pump producing acid in the stomach, there is an increased risk of bacterial infections that can cause intractable diarrhoea. That is why nowadays most gastroenterologists prescribe PPIs at the lowest effective dose possible and for the shortest length of time. "And you do not really need these drugs if you need just a temporary suspension of acid production - say for those who suffer from hyperacidity after dinner," says Dr Das. One of the old-fashioned antacids will suffice.

Despite the adverse effects, PPIs and H₂ blockers are immensely popular. "You pop a pill once in the morning and you knock out acid for the day. It's so convenient," says Dr Das. The problem with older antacids is that they are not effective as long. You need to pop a pill every two-three hours to keep excess acid in check.

Although the ceramic-based drug created at CGCRI is on the lines of the older pills, it stays active for over six hours. "Our drug can also be administered at a lower dose," says Chakraborty. Moreover, unlike the fast-acting effervescent fruit salts, the drug doesn't cause the body to retain water or add extra sodium to blood, which is harmful for patients with high blood pressure or cardiac diseases. Says Bandyopadhyay, "Since the drug acts locally in the stomach, it doesn't affect the liver either."

After testing it successfully on laboratory rats, the researchers are gearing up for its human trial. Dr Rupnarayan Bhattacharya, professor and head, department of plastic surgery at R.G. Kar Medical College and Hospital in Calcutta, will help organise the clinical trial. "We are planning to test the drug on patients who undergo acute stress, such as patients with severe burn injury," he says. Burn patients are so traumatised that they have excessive acid secretion in the stomach. That needs to be countered by antacids or acid blockers. Otherwise, they undergo erosion of the stomach and grow ulcers. "The plan is to administer the drug to a group of patients and offer PPIs or acid blockers to equal number of patients," says Dr Bhattacharya. Some patients will get the CGCRI drug and the rest will be given the conventional treatment for three to six months. Then doctors and researchers will measure the impact of the drug. "We are now in the process of filing an Indian patent and obtaining approvals for the human trial," says Chakraborty.

According to K. Muralidharan, director of CGCRI, if clinical trials are successful, the drug can be an effective alternative to antacids of similar category in the market. "We are all waiting with our fingers crossed for the results of the human trial," he says.

ANTACIDS: PROS AND CONS

Drug type: Proton Pump Inhibitors (omeprazole, rabeprazole, pantoprazole, esomeprazole)

Prescribed for: Acid reflux, heartburn, peptic ulcers, gastritis, some forms of stomach tumours

Serious side effects: Heart attack, dementia, kidney disease and bone fractures

Drug type: H₂ blockers (ranitidine, famotidine, cimetidine, nizatidine)

Prescribed for: Acid reflux, heartburn, peptic ulcers, gastritis

Serious side effects: Scaling skin, changes in vision, confusion, agitation, wheezing, chest tightness, irregular heartbeat, hallucinations *

Drug type: Effervescent sodium bicarbonate

Prescribed for: Indigestion, heartburn, upset stomach

Serious side effects: Swelling of feet, muscle pain or twitching, frequent urination, rapid breathing, fluid retention in patients with heart failure, hypertension or kidney problem

Drug type: Aluminium hydroxide and magnesium hydroxide

Prescribed for: Heartburn, acid indigestion, bloating and stomach discomfort

Serious side effects: Severe allergic reactions (rash, itching, swelling of mouth, face, lips), tightness in the chest, slow reflexes, vomiting

Published in:

[Telegraph](#)