A Constituent Laboratory of Council of Scientific & Industrial Research New Delhi

NEWSLETTER

December 2008

Contents

International Food Convention - IFCON 2008

Sixth International Food Convention (IFCON) is being held during 15 - 19 December 2008 at Mysore. The event has been organized by Association of Food Scientists & Technologists (India), Mysore in association with Central Food Technological Research Institute, Mysore; Defence Food Research Laboratory, Mysore and Ministry of Food Processing Industries, Government of India, New Delhi.

The focal theme of the convention is ***"Newer challenges in food science and technology : Industrial perspective"***.

About the Theme:

The world population has now risen to about 7000 million and is expected to reach 9000 million by 2050. Natural resources are continuously falling short of demands. Traditional methods of delivering food and water and maintaining of environments no longer meet the needs. Hence, food products and processing methods as well as packaging require rethinking. Improving the overall quality of ***"Produce of India"*** to the highest levels so as to meet the hygiene, sanitary and safety standards required for good health is indeed a challenge for food professionals in the country.

The challenges faced by food processing sector could be turned into great opportunities. Technological innovation is the key to meet these challenges. This alone may not yield expected results, as it has to be supported by an enabling policy environment. The speed at which we meet the technological, policy and regulatory challenges also will determine whether our food processing sector manages to keep pace with the fast changing global marketing practices.

The conference would hold this to chalk out a road map for a healthy and sustainable growth in the food sector. It is also hoped that the event would help to shape a new vision in the emerging global economy.

Major events planned in the convention include:

Scientific Session:

A total of 32 scientific sessions are planned with this mega event spanning over 5 days. A total of 1500 delegates are expected to participate from academia and industry.

Poster Session:

The event is expected to provide a boost to food science and technology research with the participation of large number of students across the country.

Food Quest:

Food Quest is conducted with a series of contests to promote interest in the area of food science & technology with objectives as listed below.

- To identify and encourage talent amongst students and professionals linked to food research, food science, technology, engineering and food products marketing
- To forge closer ties between academics, research and industry to strengthen linkages on a long term basis
- To forecast market dynamics and technological trends in the food sector
- To focus on global food safety and quality issues

Various categories included in the event are:

- Food Quiz Contest
- New Product Concept
- Innovative Business Idea

Food Expo - 2008

As part of the IFCON 2008, a Food Expo has also been arranged and it will provide a forum for technological and economic cooperation amongst participants.

Major sectors covered by FOOD EXPO 2008 include dairy, fruits and vegetables, meat, marine, fish, poultry, cereals, beverages, ice creams, confectionery, coffee/ tea processing, ready-to-eat and ready-to-serve foods.

Dr. Prakash nominated as Honorary President of IAFoST

Dr. V. Prakash, Director, CFTRI, Mysore has taken over as the new honorary President of the International Academy of Food Science and Technology (IAFoST) of the IUFoST recently. He was decorated as the President in the 14th Congress of IUFoST held during 19 - 23 October, 2008 at Shanghai, China by Dr. Ralph Blanchfield. Dr. Prakash is the first Indian to have been nominated as the President and also is the first Fellow of IAFoST from India.

IAFoST is a group of elected distinguished food scientists and technologists who collectively pool scientific expertise in food science and technology. They are at the forefront of IUFoST helping to strengthen global food science and technology for humanity. IAFoST has a very large spread in various countries and it meets once in two years.

Dr. Prakash has plans of taking IAFoST to higher levels of performance through networking of mega institutions like CFTRI and other institutions around the world, to ensure not only the expertise in the world merges itself for a common focused agenda, but also to ensure knowledge network in the process.

NASI Platinum Jubilee Award to CFTRI Scientist

Dr. K.S.M.S. Raghavarao, Scientist, CFTRI has been awarded by the National Academy of Sciences, India the ***" NASI - Reliance Industries Platinum Jubilee Award (2008)"*** for Application oriented innovation in Physical sciences by the National Academy of Sciences, India.

The award was presented by Professor M.G.K. Menon, Advisor, ISRO in the 78th Annual Session of NASI held during 21-23 November 2008 at Chandigarh. The award carries a citation and a cash prize of Rs. 2.0 lakh.

Dr.K.S.M.S. Raghavarao receiving the NASI – Reliance Industries Platinum Jubilee award from Professor M.G.K. Menon, Advisor, ISRO. Professor Ashok Misra, President, NASI and Former Director, IIT, Delhi looks on

The citation reads as *"After an excellent academic career in chemical engineering with a direct Ph.D from University Institute of Chemical Technology (UICT), Mumbai and post - doctoral research experience at NIST, USA, and a brief stint at National Institute of Technology (NIT), Warangal, Dr. KSMS Raghavarao joined CFTRI, Mysore in 1990 and established an active food and biochemical engineering group and facilities. He has been leading R&D projects in the area of food and bioprocesses. In 2002, he has taken over as the Head of Department of Food Engineering. The achievements of Dr. Raghavarao in the field of Biotechnology and Food/Biochemical Engineering have been recognized at National and International levels".*

New Processes Released

A process for preparation of expanded horse gram

Horse gram is a pulse which is generally used after soaking, germination, cooking and also as extract or soup. *Papad* from horse gram flour were also prepared in southern region of India.

Pulses like Bengal gram and peas are only available in puffed / expanded form but not horse gram, because raw horse gram does not give puffed or expanded product at normal moisture content and conventional puffing conditions. A process has been developed for expanded horse gram to give an acceptable expanded Ready-to-Eat snack product. The product has 'reduced anti-nutritional factors' with improved protein digestibility.

The product is crispy, crunchy and shelf stable. It can be used as such or as a snack after salting or spicing. It can also be added as an ingredient in cereal bar or *chikki*.

The process could be availed from the institute for commercialization.

European Patents Granted

Process for the preparation of instant soup mix from Indian Dill (European Patent No. 1696746)

Background

Soup mixes are convenient to prepare and are popular appetizers. Soups based on corn, chicken, mixed vegetables, *palak* and mushroom are common in India and abroad. Indian dill, locally known, as sowa in Northern and *Sabsige* in Southern India is a well-known leafy plant can be classified under spices and condiments. It has good anti-oxidant properties. Products based on *sabsige* have a ready market.

This process for the preparation of instant soup mix from Indian dill with reduced viscosities and ability of holding more quantities of solids thus enhancing its energy and nutrient density. The formulation of the products involves the optimized drying of all the ingredients concerned and mixing in suitable proportions apart from modifying the starch by subjecting to physical treatments in order to yield thin paste viscosities.

The main advantages of the present invention are:

- The Indian dill or sowa is known for its medicinal properties like carminative, antipyretic and antihelminitic, in addition to being an antiflatulent
- The soup mix has good antioxidant properties
- Soup play an important role as an appetizer in diet
- Being a dry soup mix, it has a better shelf life
- It can be easily reconstituted by mixing in 1:10-12 ratio of soup powder with cold water. The mixture is stirred and brought to boil before serving
- The product prepared by the present invention has excellent sensory qualities in terms of color, consistency, flavour and overall quality.

European Patents Granted

A process for production of Dopa and Dopamine from hairy root cultures of *Beta vulgaris*

(European Patent No. 1578978 & Russian Federation Patent No. 2326946)

Background

L-dopa (Dihydroxy L-phenylalanine) and dopamine are neurotransmitter precursors being used for sympotomic relief of Parkinson's disease. The high cost, demand and high dose associated with it has led to look for various alternatives and inexpensive methods for their production. L-Dopa is mainly produced as a secondary metabolite in plant cell cultures of *Mucuna pruriens and callus* as well as transformed root cultures of *stizolobium hassjoo. L-Dopa is also produced by various bacteria* such as *Escherichaia coli*, *Erwinia herbicola* and *Pseudomonas melanogenum*.

About the Innovation

CFTRI has developed a process for the production of Dopa and Dopamine from hairy roots of *Beta vulgaris*, where the hairy roots are obtained upon infection of the explant using an isolate of *Agrobacterium rhizogenes* wild strain.

The advantages of the invention are:

- *In vitro* culture of hairy roots are used for production of Dopa and Dopamine
- As roots exhibit hormonal autotrophy, the process requires a relatively low cost medium for the phytochemical production
- The faster growth and genetic as well as biochemical stability of hairy roots is an added advantage
- The identification of the right stage of culture time for maximum accumulation of Dopa and Dopamine would make this process a commercially feasible one
- Use of precursors like tyrosine, which are easily available for better production of Dopa and Dopamine would be useful
- As Dopamine is water soluble, its direct use after extraction in water could be an additional advantage
- The process can be scaled up for commercial production

UK Patents Granted

Rosemary herbal beverage powder and a process thereof (UK Patent No. 2429626)

Background

Rosemary is a small evergreen shrub growing wild throughout Europe and in many parts of India, where dry to moderately moist climate prevails during most part of the year. Unlike many herbs, rosemary has a very strong and pleasant cineolic aroma. Leaves of rosemary have an agreeable aromatic odour and camphoraceous taste. The leaves are reported to yield a volatile oil (1-2%), which is used in perfumery, pharmaceutical and culinary purposes especially for flavouring meats, sausages, soups and table sauces. The antioxidant activity of rosemary is well established. Antioxidative principles such as rosemarinic acid, rosamarinol, rosemaridiphenol have been isolated from rosemary. Presently, natural antioxidants have assumed a greater significance with respect to several cosmetic and pharmaceutical applications.

About the Innovation

CFTRI has developed a process for the preparation of readily reconstitutable rosemary herbal beverage concentrate in powder form. The processes of herbal beverage concentrate from rosemary uses a set of unit operations and the mix contains approved food grade additives. It is acceptable both as a 'still' beverage and as a carbonated beverage. It can find use in tonic waters and other therapeutic preparations.

Events at a Glance

Training Programme at CFTRI Resource Centre (Mumbai)

Practical Session in progress .....

Participants of the Outreach Programme .....

Officials and Entrepreneurs from Khadi and Village Industries Commission in a training programme session at Resource Centre, Mumbai

CFTRI's Outreach programme at Mumbai

CFTRI organized a training programme entitled "Processing and value addition to fruits and vegetables" during 17-21 November 2008 at its Resource Centre in Mumbai. A total of 25 participants from agro-food industries and NGOs attended the programme.

The course covered theoretical and practical aspects for the preparation of fruits and vegetable products which included pickles, jam, jelly, fruit squash and beverages, tuti-fruity and dehydrated products. The participants were also given an overview of setting up a food industry, food safety and regulations, packaging, product and project costing. Faculty were drawn from Resource Centre (Mumbai) and CFTRI, Mysore.

In continuation of the above programme, another training program on "Hazard Analysis Critical Control Point (HACCP) and Good Manufacturing Distribution Practices (GMDP)" for participants exclusively drawn from all over the country by Khadi and Village Industries Commission (Mumbai) was also conducted during 25-27 November .

Ph.D. degree awarded

The following research students were awarded Ph.D. degree in December 2008.

- Somashekar BR
  Lipase catalyzed esterification of sugars with alkyl side chain containing amino acids
  (Guide: Dr. Divakar S)
- Chithra M
  Xylanase from *ragi* malt and its use in the preparation of xylooligosaccharides from cereal grains
  (Guide: Dr. Muralikrishna G)

Short term training programmes at CFTRI (January - March 2009)

- Indian snack and breakfast foods: A holistic approach
  (5 - 9 January 2009)
- Quality control and safety aspects in alcoholic beverages
  (5 - 9 January 2009)
- Current trends in the baking science and technology
  (19 - 23 January 2009)
- Holistic approach for food processing industry: Quality, safety, environmental and IPR issues
  (19 - 23 January 2009)
- Sensory analysis of aroma and flavour of food ingredients and packaged foods
  (2 - 4 February 2009)
- Biotechnological approaches for the utilization of yeast and fungi
  (2 - 6 February 2009)
- Escort services for management of food processing industry
  (16 - 20 February 2009)
- Microbiological and chemical analysis of mineral and packaged drinking water
  (2 - 6 March 2009)

For details on the short term courses,

Please contact :

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CFTRI, Mysore - 570 020
email : stc@cftri.res.in

Wish You
A Very Happy and Prosperous
New Year 2009

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LEADING IN INNOVATIVE R&D IN FOOD SCIENCE AND TECHNOLOGY FROM INDIA WITH A GLOBAL REACH OUT . . .

(A constituent laboratory of Council of Scientific & Industrial Research, New Delhi)

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