



# cftri

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

## NEWSLETTER

April-June 2006

### Contents

- National Technology Day
- Hon'ble Minister Shri Subodh Kant Sahay Visits CFTRI
- International Symposium on *Building Leadership Skills in Food and Nutrition Essential for National Development*
- New Processes Released
- US Patents Granted
- Ph.D Degree Awarded
- Forthcoming Events

### National Technology Day at CFTRI

CFTRI celebrated National Technology Day on May 11, 2006 with Prof. S.K. Joshi, former Director General, CSIR, as the chief guest. Prof. Joshi called upon entrepreneurs to team up with institutes like CFTRI to be a significant player in the emerging world food scenario, especially in the area of functional food and nutraceuticals. He also touched upon the opportunities unfolding in the nanotechnology with impact on food processing.

Dr. V. Prakash, Director, CFTRI in his presidential address outlined achievements of the institute during 2005-06.



Prof. S.K. Joshi, former Director General, CSIR, delivering the National Technology Day lecture at CFTRI

On this occasion, National Technology Day insignia were presented to 26 entrepreneurs who availed CFTRI technology during 2005-06. While thanking for the support given by 'Team CFTRI', one of the entrepreneurs, Shri Nalin Merchant of Laljee Godhoo & Co., Mumbai, manufacturer of asafoetida for more than a century, described how the partnership with CFTRI has helped them to compete in the global market.

## Hon'ble Minister for Food Processing Industries inaugurates new Hostel Block

Shri Subodh Kant Sahay, Hon'ble Minister of State (Independent charge), Food Processing Industries, Government of India visited Central Food Technological Research Institute, Mysore on May 28, 2006. On this occasion, the Minister declared open the newly constructed students' Hostel Block in the campus. He lauded efforts of CFTRI in human resource development activities.

The Minister visited CFTRI Showcase, Pilot Plant, International School of Milling Technology and Nodal Codex Food Laboratory. Shri Sahay took time in interacting with the scientists and engineers to get a feel of ongoing programmes in the institute.



Hon'ble Minister for Food Processing, Shri Subodh Kant Sahay, inaugurating the newly built Hostel block in the campus. Dr. V. Prakash, Director, CFTRI is also seen



Prof. S.K. Joshi presenting the National Technology Day insignia to one of the entrepreneur. Dr. V. Prakash, Director, CFTRI is also seen

On this occasion, Dr. V. Prakash, Director, CFTRI made a brief presentation of CFTRI's achievements in the area of food science and technology. He drew Minister's attention to CFTRI's linkages with government, consumers, academia, industry and market.

The Minister complimented 'Team CFTRI' for making significant contributions to food processing sector of the country. He also stressed upon drawing a comprehensive action plan to result maximum impact on the society with respect to R&D, HRD, Food Standards, Quality & Safety and Integrated Food Laws.



Shri Subodh Kant Sahay with Director and other scientists in the Nodal Codex Food Laboratory at CFTRI

---

## International Symposium on *Building Leadership Skills in Food and Nutrition Essential for National Development*

---

Central Food Technological Research Institute, Mysore organized an international symposium on 'Building Leadership Skills in Food and Nutrition Essential for National Development' during June 23 – 25, 2006 in collaboration with United Nations University, Japan; International Nutrition Foundation, USA; International Union of Nutritional Sciences; Capacity Strengthening in Nutrition in Asia; United Nation Children's Fund; Tufts University, USA and Government of Karnataka as the partner state. The event was also co-sponsored by number of industries and scientific bodies.

The symposium took off with internationally acclaimed agricultural scientist, Prof. M.S. Swaminathan, Founder Director and Chairman, MSSRF, Chennai inaugurating the event. He also released the abstract book of posters and presentations. The keynote address was given by the renowned nutritionist, Prof. Nevin Scrimshaw, President, International Nutrition Foundation, USA. Dr. Ricardo Uauy, President, International Union of Nutritional Sciences inaugurated the poster session meant

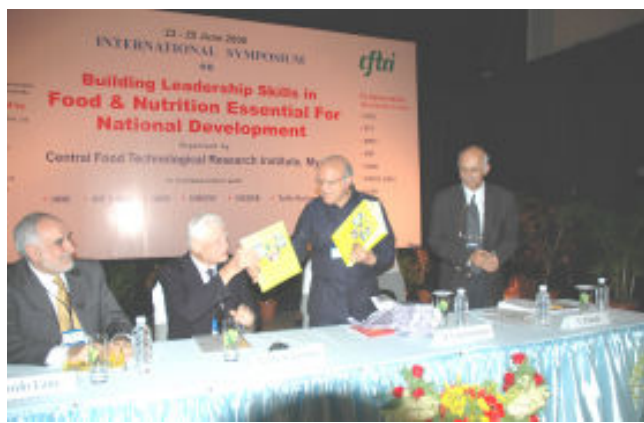
for young reserachers in the area of nutrition and capacity building. Dr. V. Prakash, Director, CFTRI presided over the function.

The international event had evinced a lot of interest among nutritionists. Large number of national and international delegates participated in the deliberations. The presentations focussed on Training & Leadership, Regional Experiences & Training Needs, Issues in Capacity Building – National and Global and Industry Perspective of Capacity Building. In the poster session, young researchers exhibited nutritional capabilities of their respective regions. The topics included biofortification, well-being of health and nutrition enhancement to the population .

The symposium concluded with a panel discussion and the recommendations were brought out as ***Mysore Declaration*** for capacity building in nutrition globally. The best poster awards were also presented in the concluding session.



Inauguration of the Symposium (from L to R): Dr. Ricardo Uauy, President, International Union of Nutritional Sciences, Dr. V. Prakash, Director, CFTRI; Prof. M.S. Swaminathan, Founder Director & Chairman, M.S. Swaminathan Research Foundation, Chennai; Prof. Nevin Scrimshaw, President, International Nutrition Foundation, USA



Release of the Abstract book (L to R): Dr. Ricardo Uauy, Prof. Nevin Scrimshaw, Prof. M.S. Swaminathan and Dr. V. Prakash are seen

### Integrated Hot Air Roasting Machine

Roasting of oilseeds, pulses, cereals, spices and snack foods are traditionally practiced in India for enhancing the storage life, improving the organoleptic properties and for ease of incorporation into breakfast and ready-to-eat foods. Currently, the roasters used are batch type heated pans. In large-scale units, sand is the medium of heat transfer and it is heated using electricity or diesel. The sand roasters have the problem of non-uniform product characteristics, with high percentage of sand and ash content. Due to the presence of fine sand and ash in the final product, it is unhygienic. These units are also not suitable for roasting and puffing operations due to non-uniformity of heating process.

The institute has developed a machinery for roasting/ toasting cereals, pulses, spices, oilseeds and ready-to-eat snack foods. The unit can roast upto 150 kg/hour and the process is eco-friendly.



### Blue Pigment from *Spirulina*

Phycocyanin (blue) and phycoerthrin (red) are the two major natural pigments commercially utilized from algae. They are photosynthetic accessory pigments collectively called phycobillins. *Spirulina platensis*, blue green algae, is a potential source for the commercial production of phycocyanin.

Natural colourants from algae are widely used in food, cosmetics and pharmaceuticals, especially as a substitute for synthetic dyes. Further, the natural colourants are gaining importance over their synthetic counterparts in view of their non-toxic and non-carcinogenic properties.

Freshly harvested wet biomass of the blue green algae, *Spirulina platensis*, free from contamination and other algal species is the main raw material used. The process involves biomass harvesting, washing, dilution, homogenization, extraction of

phycocyanin, filtration / centrifugation, adsorption / centrifugation membrane, membrane concentration and freeze-drying. The principal equipments required are raceway ponds, harvesters, homogenizer, centrifuge, adsorption column tanks and membrane system.

Algal colorants are used in many of the fermented milk products world over. The technology of the production of blue pigment from *Spirulina* is available from the institute.



### Decortication of finger millet (*Ragi*) (US Patent No. 7029720)

The finger millet (*Ragi*) is not cooked in the grain form as the seed coat of the millet grains is difficult to be removed. Also the seed coat affects the cooking quality and its palatability. The whole grain millet flour imparts dark color, coarse fibrous texture and characteristic odour. These factors not only affect the nutritional quality of the millet-based products, but also hinder their acceptability among consumers. In order to overcome these problems, CFTRI has developed a process for decortication of finger millet.

The advantages of the process include:

- It reduces the intactness between the seed coat and the starchy endosperm and facilitates easy decortication
- Decorticated millets attain soft texture similar to rice within 5 minutes of cooking
- The decorticated millet is easy to pulverize into flour or grits for traditional food preparations
- Finger millet grits are similar to wheat semolina or soji
- Flaked, popped and other novelty foods could be prepared from the decorticated millet similar to other cereals such as rice, wheat and maize
- Improved nutritional quality of the millet due to the enhanced retention of some of the water-soluble nutrients and reduction in the concentration of the antinutritional factors such as phytates, enzyme inhibitors and the seed borne microflora
- The storage quality of the processed millet is enhanced because of inactivation of lipase and hardening of the endosperm

### Roasted and oleoresin flavoured nut formulation (US Patent No. 7078067)

In order to meet high demand for spiced nuts in the market, CFTRI has developed a new alternate flavouring, as the existing flavoring used has the following limitations.

- Presence of thermo-resistant bacterial load makes it unsafe during storage
- Non-uniformity of the flavor quality
- Reduced impact of natural spice flavor
- Rapid loss of aroma during storage and presence of intense colored spots on the surface of the nut

The usage spice oleoresins can reduce these disadvantages to a large extent and found very convenient in large scale operations. The institute

has standardized a process for the use of oleoresins for flavoring of deep fat fried or dry roasted cashew nuts.

The advantages of the process include:

- Provides uniform coating and color to the final product
- No need of any binding agent
- The problem of separation of flavoring during handling and storage is avoided, since the oleoresin is in liquid form
- In the case of fried kernels, the oleoresin coating ensures protection to the surface

## International Workshop on Nutrition in Human Health

In the background of importance of nutrition in human health globally, two international workshops were organized at Central Food Technological Research Institute, Mysore in June 2006. The first workshop entitled 'Enhancing the efficiency of nutritional investigations' was held during June 18-22, 2006 with 17 nutritionists participating from different countries. The International Nutrition Foundation, USA sponsored the participants. Prof. Nevin Scrimshaw, the icon of nutrition outreach, was the main faculty for this workshop.

The second workshop entitled 'Metrological concepts for strengthening food and nutritional measurements' was held during June 26-30, 2006 with 17 participants. The participants were sponsored by INF, IUNS, UNU, CASNA and CFTRI. The faculty focused on various nutritional measurements, its significance in nutrition-based programmes and the need to integrate the recent developments of analytical and instrumentation into nutrition studies.



Faculty and participants from the workshop on Enhancing the efficiency of nutritional investigations



One of the participants expressing views in the concluding session of the workshop on Metrological concepts for strengthening food and nutritional measurements

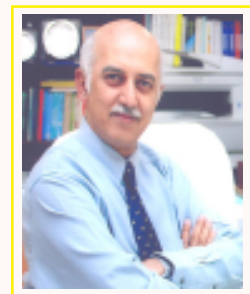
## Dr. Prakash's term extended as Director, CFTRI

Dr. V. Prakash's tenure as Director, Central Food Technological Research Institute, Mysore, has been extended till November 2011. He took over as Director of the institute in 1994. Dr. Prakash joined CFTRI in 1981 as a CSIR pool officer. CFTRI is a premier R&D institution established in 1950 in the area of food science and technology under the aegis of Council of Scientific and Industrial Research, Government of India, New Delhi.

A Bhatnagar laureate in biological science, Dr. Prakash was bestowed with Padma Shri in 2003 by Government of India. He is a Fellow of the most of the prestigious National and International Scientific bodies and academies including the Royal Society of Chemistry (FRSC), UK.

Amongst the various awards he has received include: Karnataka Rajyothsava award, DuPont-Protein

Technology International award, FICCI 2001 award for outstanding contribution to Life Sciences, Prof. V. Subramanian Industrial Achievement award and many more.



As an active researcher even now, he has more than 160 publications in peer-reviewed journals and over 50 patents in India and abroad. He has authored 6 books, 23 book chapters and presented more than 400 papers in national and international conferences.

On this occasion, Dr. Prakash thanked each and every staff of the institute who work tirelessly in raising the performance of the institute.

## Ph.D. degree awarded

The following students received Ph.D. degree from University of Mysore during the period.

- Suresh Kumar G  
Studies on the beneficial effects of dietary fiber on experimentally induced diabetic rats with particular emphasis on glomerular filtration matrix  
(Guide: Dr. PV Salimath)
- Muralidhar L Hegde  
Studies on DNA helicity, stability and alpha-synuclein-DNA interactions in relevance to Parkinson's disease  
(Guide: Dr. KS Jagannatha Rao)

## Forthcoming events

### CSIR Foundation Day

CSIR foundation day will be celebrated on September 26, 2006. On this occasion retired employees and those who have completed 25 years of Council service will be felicitated. As a run up to the celebration, various competitions are being held for children of the employees.

### Short term training programmes (September - November 2006)

- Chocolate and sugar confectionery: role of sugars and fats (4 - 8 Sep. 2006)
- Molecular techniques in microbiology (4 - 8 Sep. 2006)
- Protein enriched foods and present nutrition issues (11 - 15 Sep. 2006)
- Modern trends in the baking science and technology (11 - 15 Sep. 2006)
- Appropriate technologies for value addition to fruit and vegetable products from farm to consumer (18 - 29 Sep. 2006 )
- Design and development of plastic based packaging of foods (4 - 6 Oct. 2006)
- Food colours: natural and synthetic (9 - 13 Oct. 2006)
- New approaches in post-harvest technology of fresh fruits and vegetables (16 - 20 Oct. 2006)
- Modern methods of pesticide residue analysis (16 - 20 Oct. 2006)
- Nutrition perspective of food: the current scenario (30 Oct. - 3 Nov. 2006)

***For the details on the short term courses***

***Please contact :***

**Head  
Department of HRD  
CFTRI, Mysore - 570 020**

**email : [hrd@cftri.res.in](mailto:hrd@cftri.res.in)**

### Visitor(s) to CFTRI

- Shri P.I. Suvarthan, IAS, Secretary, Ministry of Food Processing Industries, Government of India, New Delhi, visited the institute on June 01, 2006 for discussion on focal issues relating to food processing sector in India
- Dr. K.V. Sarvesh, Additional Director of Agriculture, Office of the Commissioner of Agriculture, Govt. of Karnataka, Bangalore, for discussion on training requirements to their staff in the area of cereal processing
- Dr. Donald Coffey, General Manager and Dr. Marvin P Miller, Senior Project Manager of The Dow Chemical Company, USA, visited the insititute for interaction in the area of bakery products and its beneficial aspects



**CFTRI: An ISO 9001:2000 & ISO 14001 Organisation and NABL Accredited Laboratory**

On India Government Service

**To**

---

---

---

---

*If undelivered, Please return to:*

**Director  
CFTRI  
Mysore-570 020**