'SEED' Participates in "Smart Fish Trade & Development Forum" at Mauritius

R. Shyamala, Gen. Secretary, SEED.

SEED was invited by IOC-Smart Fish, (a regional fisheries program managed by the Indian Ocean Commission and funded by the European Union) to participate at the 4th Trade Forum organized in Mauritius from 15th - 17th March 2018 . IOC-SMARTFISH operates in the Africa – Indian Ocean countries and focuses on fisheries governance, management, monitoring, control and surveillance, value chain/trade and nutrition /food security in the region. The theme of the Trade Forum was 'Making Money through Sustainable Fisheries'.

Dr. Sunil Sweenarain, IOC-SMARTFISH Project Coordinator invited Prof Ramakrishna Rao and Ms. Shyamala to participate and present on Solar Dryer Technology for Fish Drying. Smart Fish, Mauritius has procured Solar Dryer SDM-50 in 2014 and the same is being used for Fish Drying. Two representatives of Smart Fish attended SEED training programs in 2015 and 2016 and they are since actively involved in food processing and dehydration of local food and fish resources using SEED Solar cabinet dryers and processing technology.

Ms. Shyamala Rambhotla represented SEED at the Trade Forum and made a presentation, on "Solar Energy for Agro Fisheries Business" in the session on 'Technology, Modernization and Social Innovations'. The presentation was very well received by the

audience and was followed by detailed interactions and enquiries on SEED technology and capabilities in Solar dehydration.

The three day event was participated by 160 delegates from 20 African countries. The event concluded on the third day with a field visit and exhibition, where drying of fish in SEED solar cabinet dryer was demonstrated. Other solar dried food products were also exhibited.

Other themes covered in this forum included small scale fisheries and the blue economy, economics of the small scale value chain and climate change, management, governance and MLS, technology, modernization, social innovations and investments and financing in fisheries.

Other important speakers were from FAO, WTO and country representatives from Germany, FAO, USA, Norway and, Mauritius etc.

Dr. Sunil Sweenarain who is working on a project with European Union funding for African countries, declared that a micro enterprises to promote solar dryer technology and solar food processing technology for fruits, vegetables and fisheries will soon be established in Mauritius.

FORTHCOMING TRAINING PROGRAMME

Training Programme on "Solar Processing of Fruits & Vegetables"

(Additional Focus on Organic Fruits & Vegetables) From 22nd to 25th May 2018. Registrations started For full details contact:seedtrainingprograms@gmail.com or call 040-23608892, Seats Limited to 20 participants

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SEED COMMUNICATIONS

A Quarterly News Letter from
Society For Energy, Environment & Development

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Development of Nutritional Supplement for Geriatric Population Using Solar Food Processing Technology

Suresh Itapu, Ph.D.

India has more than 104 million (2011) population over 60 years of age. There has been a sharp increase in the number of elderly persons between 1991 and 2001. It has been projected that by the year 2050, the number of elderly people would reach about 324 million surpassing the population of children below 14 years. Because of increased standards of living and advances in medicine and healthcare, people are now living longer than ever before. The geriatric population may suffer from both communicable as well as non-communicable diseases. A decline in immunity as well as age-related physiologic changes leads to an increased burden of communicable diseases in the elderly. Meeting the nutritional requirement - especially micronutrients - is challenge to the growing elderly population in India. This is concerned with the health and nutrition of aged persons with new formulations from natural foods to increase the bio availability of vital nutrients for the health and wellbeing of the elderly. Inclusion of micronutrient rich natural food products using the Solar Food Processing Technology (SFPT) will improve the bioavailability of these nutrients to this population as they depend on chemical supplements for these vital nutrients. Also, very few nutritional supplements are being formulated using micronutrient rich natural foods. A good diet can help ensure older people feel healthier, stay active for longer, and help protect against illness and speed recovery, ultimately making an important contribution to quality of life.

SFPT can be adopted to develop nutritional supplements to make impact on the nutritional status of the target population. These formulations may be developed from natural foods to increase the bio availability of vital nutrients, increase antioxidant status. Antioxidants provided by the supplement will help the target population to slow down the aging process and lead a healthy and quality life. Locally grown agriculture produce, which are rich in micronutrient and antioxidant may be used to develop nutritional supplements for geriatric population. Nutritional supplements can be developed in different food forms to suit the palate of the target population and focused nutrients using solar food processing. These nutritional supplements would be made from locally available fruits, vegetables, cereals & legumes for the elderly to overcome nutritional deficiencies. Innovative solar food processing technology would be used to process these raw materials to produce nutrient enriched supplement, which is environmental friendly and sustainable.

Typical composition of the formulations may have, tomato powder, malted ragi powder, defatted soy flour, malted green gram powder, dehydrated moringa leaves, dehydrated amaranth leaves, dehydrated spinach, amla powder, dehydrated curry leaves, dehydrated ginger, carrot powder and dehydrated mushrooms etc. Primary focus will be on providing supplemental amount of Protein, Vitamin A, Calcium and Iron to meet the Recommended Daily Allowance (RDA) of these vital nutrients for the geriatric persons. In addition to proving vitamins, minerals and other macronutrients, these supplements will be a good source of other bioactive components such as antioxidant. These antioxidants play vital role in managing the age-related diseases of the elderly.

Training Programs
Solar Food Processing
(Practical demo Focus on solar drying of Mango, Pine Apple, Finger Millets, Tomato & Carrot) 27th February – 2nd March 2018

Mrs. R. Shyamala

SEED conducted a 4 day training program from 27th February to 2nd March 2018 on "Solar Food Processing" with major focus on practical demonstration for processing Mango, Pineapple, Finger millets and Carrot with different dehydration techniques

The program was held as part of the SEED objective of dissemination of Food processing technology and in continuation of a series of training programs.

Processing of Mango, Tomato, Carrot and Osmo-Solar Processing of Pineapple slices were included as hands-on practical work. The theoretical and knowledge/ skill areas covered in the programme include concept of commercialization of solar cabinet dryers; general methods of dehydration vs Solar dehydration – application of green energy technology for value added fruits; vegetables and forest produce; Health and wellness with solar dried foods, their nutritional and nutraceutical benefits; packaging and shelf stability; project feasibility and economics; quality management and food safety of solar dried foods; chemical, microbiological and sensory analysis of solar dried foods; food fortification using solar dried foods and marketing solar dried foods.

Expert Faculty:

The Course faculty included invited subject matter experts from SEED and other invited experts from Institutions of repute working in respective areas.

Participants Profile:

Uniqueness of this training program is that all the participants were entrepreneurs who wish to enter into Food processing industry and want to explore Solar Energy as an alternative energy source for dehydration. They are committed to value addition to agri-horticultural produce and minimize post harvest losses.

The training concluded with a valedictory program and there was overwhelming overall appreciation for the program from all the participants. Participants suggestions included devolving more time for practical operation of the dryers.

PARTICIPANTS IN TRAINING PROGRAM

TRAINING ON TESTING & ANALYSIS OF SOLAR DRIED FOODS. 4th – 9th April 2018

Dr. Narayan Prasad

One of the recent observations regarding the competency threshold of food science professionals across the country is lack of adequate knowledge and skills of food testing and analysis. This was traced generally to inadequate exposure of students to traditional and emerging methods of food testing and analysis. This deficiency is becoming an area of urgent concern by the industry and academic institutions in view of the fast and aggressive implementation of food safety and standards by FSSAI across the country. In recognition of this urgent need SEED has initiated an intensive training program with appropriate balance of Know How and Do How components and offered the first such program in the first week of April 2018 to the faculty of Home Science College, PJTSAU along with its own new food tech professionals. The faculty consisted of highly experienced and eminent former food scientists from DFRL, Mysore. The Know How and Do How modules covered various aspects of analysis of foods and food products, with special reference to Fruits and Vegetables, for their Proximate Constituents - Moisture, Crude Fat, Ash, Crude Protein, Crude Fiber and Calorific Value etc., in addition to nutraceutical attributes of fruits and vegetables like Total polyphenols / Flavonoids / Carotenoids and Total Antioxidant Activity. Further an insight, both theoretical and practical, into the Water Activity aspect, which is an important characteristic, in relation to storage of foods was also provided.

FACULTY AND PARTICIPANTS

HANDS ON EXPERIENCE

SEED COMMUNICATIONS
A Quarterly News Letter

From SEED R&D LAB
Development of Innovative Fruit bar with Pineapple and Pomegranate for health and delight

Dr. Y. Sreenivasulu, B. Bharathi and S. Priyanka

India is endowed with large production of Pineapple and Pomegranate, grown as major horticultural crops in the country. While Pineapple is reasonably well exploited as a table fruit as well as in the processed form, Pomegranate is still largely used as a table fruit with insignificant use in processing. While Pineapple is endowed with highly accepted organoleptics, nutrition and some nutraceuticals benefits, Pomegranate has emerged in the last two decades as a power house of nutrition and nutraceuticals. It was considered appropriate to develop a nutritious, healthy and nutraceutical rich product based on Pineapple and Pomegranate fruits in the form of fruit bars using Solar dehydration technology. The mixed fruit bar is targeted to be great tasting with high nutrition and nutraceutical benefits, particularly in respect of antioxidant levels.

Fresh Pineapple fruit was prepared by removing the crowns, peel and cores. The prepared fruit was pulped by passing through a pulper. The prepared pulp was stabilized by rapidly heating to a temperature of 90 +/- 5 deg C. Pomegranate fruit was prepared by separating the arils, extracting juice and concentrating the juice to 45 deg. Brix in a Solar cabinet dryer at 50- 55 deg C.

Pineapple pulp and pomegranate juice concentrate obtained as above were blended well in the desired proportion along with required quantity of sugar and other additives. Processing conditions included - tray load of 7 kg/Sq. M, cabinet temperature of 55 deg C, final moisture content of 12% and an average yield of 40%. The drying time was 16 hours.

The dried sheets were cut into convenient rolls/bars and packed in appropriate packing material for long shelf life.

Pineapple with Pomegranate Rolls

The great tasting and delightful Pineapple with Pomegranate blended fruit bar provides synergic benefits of high energy in addition to a host of nutraceuticals and nutrients. The blended bars contain on an average 200 K cals of energy per 100g, and important micro nutrients like Vitamin C (45mg/100g) and Iron (1 mg/100gm). The blended bars also deliver antioxidants and nutraceuticals like Beta Carotene (61mcg/100g), Total Phenols (188mg/100g), and Flavonoids (1.75mg/100g). Studies are underway to further standardize the formulation, packaging and assessing the shelf life of the bars.

Pineapple and Pomegranate blended fruit bars offer enormous opportunities to small fruit farmers and entrepreneurs to add value to their produce and new market opportunities for these great tasting fruit bars delivering sustainable health and wellness benefits.

To our Esteemed Readers

You are aware that we have been publishing the Quarterly News Letter since the last four and half years and brought out 5 volumes and 18 issues of the same so far. We propose to conduct a readers' survey through a structured questionnaire to elicit your views and comments to further improve the contents and communications. This will be sent through the next issue of SEED News Letter and we request you to kindly spare few minutes of your precious time to complete the survey and forward the same to us. This will greatly help us to make appropriate changes in the contents and communications to make it more relevant and interesting to the readers.