



SEED COMMUNICATIONS

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

Volume : 1 No : 1

FROM THE DESK OF EDITOR

January - March, 2014

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In 1987, some of us, professionals in various fields of scientific and engineering endeavour, deliberated and decided to offer our experience and expertise to strengthen the hands and efforts of various organisations and to implement economic and social welfare programmes. We also decided that our field of activities should be 'uplift of the rural communities' which are, through most of our history of independent India struggling to find their feet and signature in the developmental agenda. We further decided that we must attempt inclusive and green solutions through integration of energy and environment and development. Our rural communities are burdened with poverty—in many cases almost destitution – and tradition which is coming in the way of their progress and entry into the region of minimal affluence. We wanted to break the prevalent belief that advanced science, modern technology and environment and development are not mutually exclusive. Instead they can be vastly reinforcing each other. Thus was born our vision.



Out of this vision was born the specific mission in tune with our expertise.

- (i) We will endeavour to provide green solutions
- (ii) We will generate methods which enable utilization of natural resources like fruits, vegetables and other produce.
- (iii) Value addition will be an important goal of the methods that we provide.

- (iv) Our methods should put some money into the hands of these communities.
- (v) All this will mean sustained R & D effort through the entire value chain.

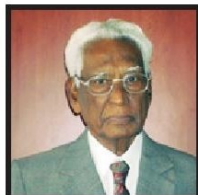
Our sustained effort has resulted in ground breaking technologies, viz., innovative solar cabinet dryers of various sizes and integrating the food processing technology for preservation and long shelf life in a clean, hygienic environment and with zero energy cost.

A tremendous progress has been accomplished in solar food processing technology, the only full-fledged R & D centre working in this area internationally. This 'communications' will be the source for promotion and popularisation of this novel and unique technologies related to food processing and solar energy applications. Thus was born SEED (Society for Energy, Environment & Development).

A quarter century has elapsed since the inception. During these very active and fruitful years, many things have happened, both successful, sometimes despairing and disappointing. However today we feel that we have arrived at a point where we can communicate with courage and confidence our sustained journey into the future. We have chosen the 'SEED Communications' as our vehicle of communication.

We hope that this will serve as an active collaborative channel between our various societies engaged in the revival, renewal, and regeneration of prosperous Rural Communities.

__ Prof. P.N. Murthy
Chief Editor



Founders Message

Our dream of conveying our **SEED FAMILY'S** technological innovations and achievements in **solar food processing and dryer technologies** have come through this SEED communications.

- Prof. M. Ramakrishna Rao
Founder General Secretary

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SEED IN ACTION

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Training programmes from 'SEED' Rural Training Centre Tholukatta

RURAL EXHIBITION - AWARENESS ON SOLAR ENERGY APPLICATIONS AND DEVICES

The exhibition was organized at Tholukatta to bring the awareness of the solar energy applications for rural communities in the villages on 19th October 2013 at Golden Function Hall, Tholukatta Village. Seven manufacturers of the solar devices were participated in the Exhibition and demonstrated the various devices manufactured by them. 800 villagers, high school students, self help groups, and college students attended this programme and benefitted with good knowledge on solar energy applications. This programme was sponsored by NABARD.



RECHARGING OF BORE WELL WITH RAIN WATER HARVESTING

Demonstration to farmers from 23 – 26th May 2013. The 40 farmers will adopt this technique for water pumping to the fields etc.



INAUGURATION OF TRAINING CENTRE FOR SOLAR ENERGY APPLICATIONS (SUPPORTED BY BHARAT DYNAMICS LTD., HYDERABAD

Training centre was inaugurated by Dr.N.K. Raju, Executive Director (P&A) BDL on 5th July 2013 at Tholukatta Village, Moinabad Mandal, R.R. Dist. Around 200-250 participants attend the programme. He addressed the participants on this occasion and advised the participants to take training and benefit from this technology.

TRAINING PROGRAMME ON "SOLAR FOOD PROCESSING OF NUTRIENT SUPPLEMENTARY DIET

Ingredients drying" was imparted to 12 self help group members from 8th to 12th July 2013. The end product developed during the training programme is "Nutrient Supplementary Diet" – a Health drink for school going children.



TRAINING PROGRAMME ON "HONEY BEE KEEPING FOR PROMOTION OF LIVELIHOOD TO FARMERS"

was conducted to 47 farmers from 3rd to 6th October 2013. The end product is Pure Honey. The training programme will enhance the skill development in extracting pure honey from honey bee keeping.



FUTURE ACTIVITIES

- Free Serving Nutritive Drink – A health drink to students of Smt. Mallavarapu Sitamma Z.P. High School, Tholukatta, Moinabad Mandal, R.R. Dist.
- Training programmes on "Solar Food Processing Technology" for value addition and income generation
- Research & development on organic fruit bars

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PARTICIPANTS FEED BACK

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TRAINING PROGRAMME ON SOLAR FOOD PROCESSING OF VEGETABLES FOR VALUE ADDITION (CARROT, BEANS, GINGER, AND MALTED RAGI) ON 20th -22nd AUGUST 2013 AT SEED LABORATORY, HYDERABAD

A Report by Ms.Valshall, R.C.C., Mumbai

SEED conducted the trainers training programme with the total 18 Participants, from Chennai 9, Maharashtra 7 & Hyderabad 2 and with a view to upgrade the skills of solar food processing of vegetables for value addition by processing in solar dryers. This programme consists of theory and practical programme on various food items like Ragi Malt, Carrot, Tomato and Amla processing for the benefit of the undernourished students by formulation of nutrition supplement diet for the high school students.

The theory part covered like Sri Ch. Srinivasarao of SEED on Solar drying technology and applications. He described the basic principle and construction features of the innovative solar cabinet dryers which is the patented dryer in the country. He explained that this dryer works on green house effect and in a forced circulation mode with the solar fans.

Dr. G. Sarojini of SEED dealt with the dehydration process for value addition of the dehydrated fruits. She mentioned that nearly 20 fruits are processed for value addition and long shelf life in the form of fruit bars and rolls on a commercial scale. To mention a few of them are Mango, Guava, Mixed fruit, Sapota, Apple, Strawberry etc. The necessary data is stored in the data bank for the dissemination of technology to the local NGOs and self help groups.

Dr. V. Sudarshan Rao of NIN explained the food safety and food regulation laws. He mentioned three types food hazards. One physical contamination such as sand, glass / metal, hair, bones etc. To biological contamination – Bacterial, Fungus, Parasites and viruses etc. Three chemical contamination pesticide – residues, toxic residues, micro toxins, and phyto toxins. There is a need for

managing food hazards by following good manufacturing practices, hygiene practices, hazard analytical in critical condition of products (HACCP), and food safety audit.



Dr. B.K. Kama of packaging Clinic stated that the packaging is medicine of food products. When designing stability test protocol is important bear in mind that product age, their properties may change. This is evaluated carefully to find final solution of packaging. Dr. M.M. Krishna explained the quality control by having good manufacturing practices, hygiene practices and storage practices. Ms. Bharathi explained about the financial aspects from the banks to get the loans for the project. Other speakers – Ms. R. Shyamala, Mr.M.S.Redde, Dr. I. Kavitha have delivered lectures on various topics. After three days rigorous training they expressed great satisfaction for the information on practical training of processing these products.

VIP COMMENTS

"Excellent inputs in solar processing of foods. Praiseworthy achievements in deriving optimal benefits of solar processing along with design and development of solar drying equipments with emphasis on scale up. Please keep up and emerge as a great global player in such exciting area. God bless" - Dr.P.S. Raju, Scientist 'G', DFRL, Siddarthanagar, Mysore - 570 011

"Great project! Thanks so much to give me the opportunity to learn from you!" - Dr. Stetonic Burri, SDC, Beru, Switzerland

"I am impressed with the process of product preparation, hygiene and ambience maintenance. We look forward to collaborate in the areas of vocational courses for children with special needs in future days to come. - Sri. Prasad Murty, State Coordinator for Rajiv Vidya Mission, Hyderabad

THE CLARION CALL OF SOLAR ENERGY TO THE 'SUNRISE INDUSTRY' IN INDIA

By Sri. P. V. Suryaprakasa Rao*

Just as Solar Energy is the God's Greatest Gift and Blessing to mankind, failure to harness it for human welfare and prosperity is verily like a Curse to all those unfortunate children who fail to avail of the breast milk of their mothers. It is most regrettable that even in these times of global economic crisis that several countries of the world fail to awaken to the imperative need for utilizing the universally prevalent and readily accessible inexhaustible source of Solar Energy that sustains our planet earth. It is however a matter of rejoicing to know a pioneering work done by Society for Energy, Environment & Development (SEED) in launching solar food processing technology in the country as full-fledged discipline. Solar cabinet dryer technology is patented and it is widely popularizing in our country. The other two companies are one in Surat and the other in Madurai district have been engaged in manufacturing processed food and preserve fruit products and also Tamilnadu unit is engaged in drying of agricultural products of cereals and pulses in bulk over fairly long period.

Let us now be quite clear – Solar Energy is the only renewable source of energy humanity has known and extensively used since antiquity, without any need for any new knowhow, any additional resources, and any tools and equipment other than those universally available and in use in the humblest of households. Solar Energy, therefore, holds the promise of benefiting the common masses within the shortest span of time. The technology for the use of Solar Energy is the only one which is capable of being exploited fastest on the widest possible scale. Thus, it is high time that Pilot Solar Processing Units were set up at various strategic locations across the country for ocular demonstration of their multiple merits and practical benefits. The Ministries concerned with renewable and non-renewable energy and / or Food Processing Industry should take the initiative betimes in this regard.

Now, all said and done, because of the unique features of solar processing technology and its many virtues, it best fits the situation and eminently fulfills the needs of 'AAM ADMI' in the country who, in recent times, has come to be recognized by the powers that be and also the political parties as the 'ICON' of the masses of India. Let us, therefore, say 'Hail, Sowra Sakthi' and 'Jai, Aam Admi'! On our part, we, the Seed Organization are ever ready to provide the conceptual inspiration and extend all possible help to revolutionize the Aam

Admi Solar Food Processing movement across all India. I conclude with my soulful prayer that 'may Sun God help dot the landscape of our beloved sun-blessed India with the likes of solar food processing units flourishing in Surat, Gujarat and Theni, Tamilnadu!'

*: Mr. Suryaprakasa Rao is Technical Adviser, Priya Foods is one of the leading food technologist in the country. Mr. Rao has more than 65 years of experience in the Indian food industry and recently selected as Fellow of IFT, USA.

Nutritional Supplement for School Children Sponsored by Bharat Dynamics Ltd., Hyderabad

Ms. R. Shyamala and Dr. I Suresh Itapu

Bharat Dynamics Ltd., Hyderabad graciously sanctioned a project for Rs. 15 lakhs under Corporate Social Responsibility (CSR) scheme on vocational training for SHG women on solar food processing in Tholkatta village (Moinabad Mandal, RR Dist.) and surrounding areas. This project provides training on processing of



cereals and vegetables as ingredients for nutritional supplement for school children as well as providing income generation for rural women.

SEED formulated nutritional supplement for the age group of 6 – 16 years to supplement protein, calcium, iron, vitamin-A. The formulation is designed to provide 20-25% daily requirement of the above micro nutrients. The ingredients include sprouted ragi malt, soya flour, skimmed milk Powder, sugar and solar dehydrated carrot, tomato and amla.

Sri N.K. Raju, Executive Director (P&A), BDL inaugurated the training centre at Tholkatta on 4th July 2013. In the three training programmes at the training centre in Tholkatta, 40 women were trained in the nuances of processing of ragi, carrot, tomato and amla for production of nutritional supplement. The training also included aspects of hygiene, sanitation, packaging along with food processing and preservation. About 200 students of Smt. Mallavarapu Sitamma Z.P. High School, Tholkatta, are served 200 ml nutritive drink every day scheduled for one academic year. The drink is well accepted well by the students.