

# Report on the Seminar on Functional Foods, Nutraceuticals & Dietary Supplements

By

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The session was inaugurated by Dr. Sesikeran, former director, NIN. Are Nutraceuticals and functional foods something different than food? This was answered by Dr. Sesikeran in his presentation on 'Safety Efficacy and Assessment of Functional Foods, Nutraceuticals and Dietary supplements. Biological active molecules are responsible for the additional benefits that the functional foods and nutraceuticals can provide.

Risk assessment of these molecules containing ingredients is carried-out

and the safety levels are decided as No Observed Adverse Effect Levels (NOAEL) and Low Observed Adverse Effect Levels (LOAEL). The SUL (safe Upper limits) are based on the NOAEL which is derived either by human studies or animal studies. Globally there are many ingredients available but there is not much data available to show its safety of consumption on Indian Population.

We have been extrapolating the data from foreign studies, which is not the right match; there is a much need for the collation of data on Indian Men / Women / Children and Elderly and also with specific conditions. We

Seminar on 'Industry Perspective of Functional Foods, Nutraceuticals and Dietary Supplements' was organized along with the AGM of PFNDAI on 6th October 2012 at Hotel Courtyard by Marriott, Mumbai.

Mr. R.D. Shenoy, Chairman, PFNDAI and Dr. Adhikari V.M., Chairman, Conference Committee, PFNDAI, welcomed all the delegates to the seminar.

**Chairman Mr. R.D. Shenoy  
felicitating Dr. Adhikari**



are well advance in Ayurveda but our traditional foods are also very rich in the use of ingredients with benefits and so we try to juggle the benefits of both and want to get the

**Dr. Sesikeran  
inaugurates  
the session**





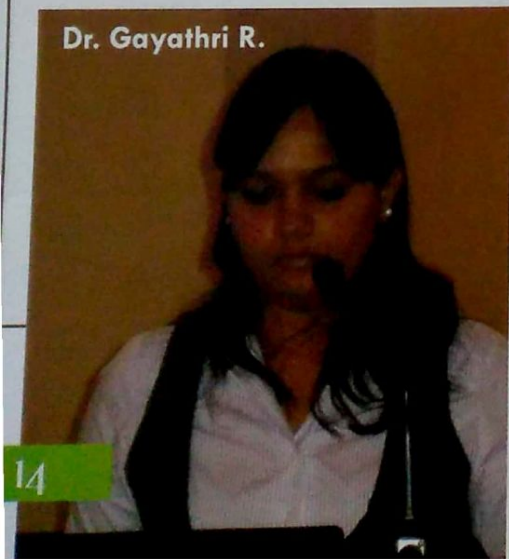


maximum benefits however we at time get the opposite effects as we are not well versed with the physycodynamic actions of the ingredients and the paths they follow to show the beneficial effect.

Thus there is a need to collect more knowledge on the Indian population and translate new knowledge into product. While adding the dietary active compounds into products, one needs to follow certain principles. The active compounds should be present at a level which will not result in either excess or insignificant intake, should be sufficient to exercise its beneficial effect, should not result in an adverse effect on the metabolism of any other nutrient, should be stable in food under customary conditions of packaging, storage, distribution and use, should be biologically available from the food and the methods of measuring should be available.

● Dr. Gayathri R., Frost & Sullivan, gave a brief insight into the Nutraceutical market potential in India. The Indian Nutraceutical market was valued at \$1480 Million in 2011. Dietary supplements were the largest

Dr. Gayathri R.



category accounting for 64 percent of the Nutraceuticals market, driven primarily by the pharmaceutical sector in the form of Vitamin and Mineral supplements.

Future economy would be driven by the investments in infrastructure, healthcare & education. Today, food, beverage and tobacco collectively accounts for 34% of the Indian household share of expenses. By 2030, India is likely to become the fifth consumer market in the world and will see a shift from the consumption of basic necessities to more luxury items. India's growth potential is observed in a shift towards a knowledge-based economy. Special Economic Zones, Technology Parks and Exports Promotion Zones -high tech industries likely to emerge as leading industry sectors and boost the market and reduced industrial licensing requirements by introducing effective industrial policy reforms would serve as a trigger.

Functional foods and Functional beverages are relatively nascent markets in India, primarily due to the existence and reliance on traditional wisdom and Ayurveda by a burgeoning middle class, which accounts for a huge chunk of the purchasing power in India. Further the marketing of products such as sports and energy drinks is primarily targeted at niche segments of the urban population, resulting in low penetration for these products, even amongst the urban population.

● Dr. Jayant Deshpande, Omni Active gave an insight on 'Functional Ingredients: Efficacy and Claims' with some of the innovative ingredients like capsaicinoids. Today obesity is a major global concern. Over 200 million men and 300 million women are obese, while over 1.6 billion are overweight. In fact,

over 65% of the world population now lives in countries where obesity and weight related health concerns kill more people than underweight health concerns. Even countries long associated with thinness are being impacted. In response to this escalation, Global weight loss and diet management products, as well as services, totaled over \$390 billion in 2010 and is expected to reach \$671 billion in 2015.

Capsaicinoids have been researched extensively. Several International Studies demonstrate weight management benefits in humans. While increased metabolic activity often results increased appetite and caloric consumption, several studies have found that the addition of capsaicinoids to the diet caused a reduction in ad libitum energy intake during subsequent meals.

Consuming enough fiery hot capsicum to provide effective weight management benefits is difficult. Also western diets do not include capsicum and many people find ingesting the recommended amounts experience gastric distress resulting in non-compliance to a diet rich in capsicum. Without the proper coating, capsicum can cause considerable oral and gastric



Dr. Jayant Deshpande

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distress. OmniActive has developed a patented encapsulated form of premium, highly concentrated natural capsicum extract. Using a proprietary matrix of excipients and coatings, Capsimax capsicum extract is delivered through a controlled release mechanism that allows the body to process the extract without oral or gastric irritation. The outer coating is designed to withstand the highly acidic, low pH levels of the stomach, then releases the capsicum into the higher pH levels of the intestine, where no discomfort is felt. Capsimax breaks down completely in the intestine, which means no discomfort upon voiding. This proprietary formulation allows consumers to experience all the benefits of non-diluted capsicum extract—with none of the discomfort.

An overview of Probiotics was presented by **Dr. Swati Gupte** in her presentation on 'Application of probiotics for Value-added Food Products'

Consumption of probiotics and its health benefit have been mentioned in the Old Testament where Abraham is



**Dr. Swati Gupte**

bacteria in gut and promotes longevity. There are many such findings which show the positive impact of probiotics. Some of the Lactobacilli, E.coli and Bifidobacterium strain have been identified which when administered live in adequate amounts confer a health benefit on the host. Prebiotics are different from probiotics, prebiotics are dietary substances like non-starch polysaccharides and oligosaccharides that are poorly digested by human enzymes and they favor the growth of beneficial bacteria—lactobacillus and bifidobacteria. Some prebiotics found in products are oligofructose, inulin, galacto-oligosaccharides, and lactulose. There are however some synbiotics available too that have an appropriate combination of prebiotics and probiotics.

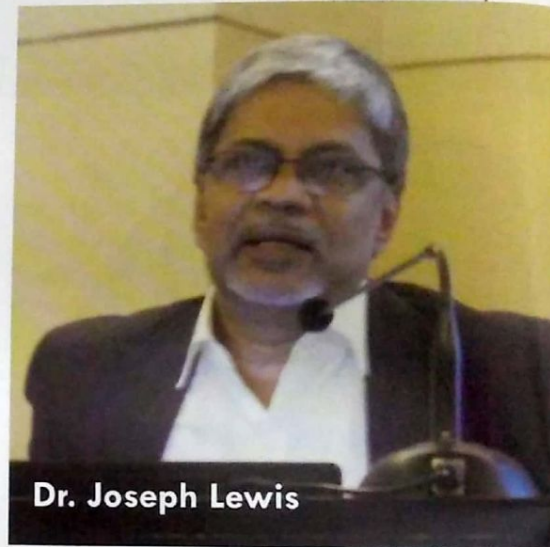
The probiotic market globally is expected to be worth US \$ 32.6 billion in 2012 and % of total revenue from Europe is 42% and Asia is 30%. However, India is a nascent market, probiotics was launched in India in 2006-07 and by 2011 reached US \$11 million market. India has a potential for becoming a major probiotics market and presently there are many products in market containing probiotics, like yogurt, dahi, and ice-cream.

With the increasing youth population and disposable income and a rise in

said to owe his longevity to consumption to sour milk. Also in 1907 Mekhinkoff had postulated that ingesting lactic acid bacilli reduces toxic

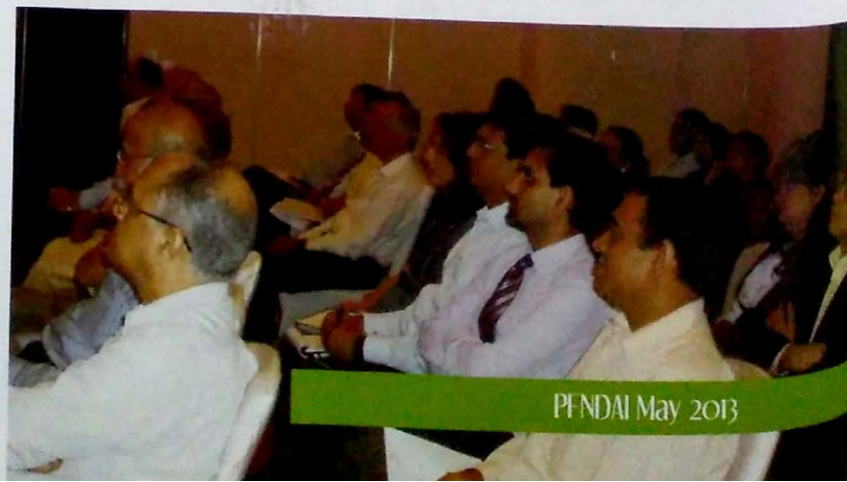
lifestyle diseases, probiotics has a good potential. However, lack of consumer awareness and proper distribution channels and cold chain facilities are seen as major market inhibitors.

'Regulatory Status of Nutraceuticals & Dietary Supplements' was the title of presentation by **Dr. Joseph I. Lewis**, Regulatory Affairs Committee, PFNDAI. He gave an



**Dr. Joseph Lewis**

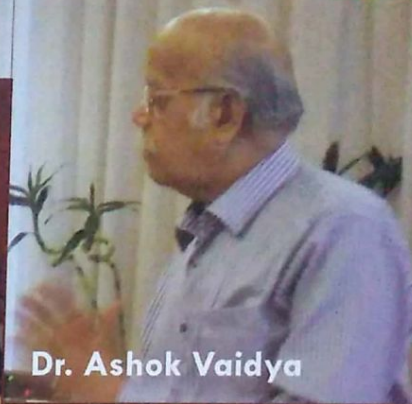
insight into the regulatory status of section 22 of FSSAI and also stated the problems that are faced by industry while looking at the definitions, as they are not very clear and they are considered as per the products requirement. There needs to be a clear demarcation between the categories. He also laid emphasis on the USFDA authorization process for products to be marketed should get a premarket approval or not when the ingredient is approved under a different act. And on whom does





the burden of proof of safety lies on? Risk assessment, Risk management and risk communication , all are interlinked and interdependent , thus we need to look at different categories of foods with a different perspective and have standards of safety , if the product is consumed for enjoyment lime organ foods, novel foods , functional foods , proprietary foods etc. there needs to be horizontal standards whereas if they are consumed when ' specific need' is prevailing , food for special medical purpose, foods for special dietary use there needs to be semi horizontal standards . Products need to be segregated on their risk assessment whether they are low, high or medium risk products and if they contain botanicals, amino acids or unauthorized additives.

**Dr. Motwani**



**Dr. Ashok Vaidya**

**Panel Discussion**

