

Seminar

on

Health Benefits and Microbiology of Some Ethnic Fermented Foods

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Abstract :

More than 80 % of global fermented foods are naturally fermented by both cultivable and uncultivable microorganisms. Fermented foods are the hubs of consortia of microorganism which may be present as natural indigenous microbiota in uncooked plant or animal substrates, utensils, containers, earthen pots, environment. The application of molecular and modern identification tools through culture-dependent and -independent techniques such as species-specific PCR, qPCR, rep-PCR, AFLP, RAPD, DGGE, TGGE, ARDRA, mtDNA-RFLP, mCOLD-PCR, MLSA, MLST, and other next generation sequence techniques including phylobiomics, metagenomics and metatranscriptomics has thrown new light on the diversity of a number of hitherto unknown and uncultivable microorganisms in naturally fermented foods. The most remarkable aspect of fermented foods has biological functions enhancing several health-promoting benefits to the consumers due to functional microorganisms associated with them. Some functional properties of functional microorganisms in food fermentation are bio-preservation, bio-enhancement of nutritional value, bio-degradation of undesirable compounds, probiotic properties, bio-production of peptides, enzymes, antimicrobial properties, angiotensin converting enzymes (ace) inhibitory properties, protective cultures, LAB as live vaccines, isoflavones and saponin, antioxidant activity, etc. The present talk will also review some health benefits of fermented foods such as prevention of cardiovascular disease, prevention of cancer, hepatic disease, gastrointestinal disorders, protection from hypertension, thrombosis, osteoporosis, allergic reactions, diabetes, reduction of obesity, increase immunity, anti-aging effects and therapeutic values/medicinal values. Today, some of these fermented foods are commercialized and marketed globally as health foods or functional foods or therapeutic foods or nutraceuticals foods. However 90 % of health-benefitted naturally fermented foods and alcoholic beverages in the world are still at home production under traditional conditions.

Brief Biosketch:

Professor Dr. Jyoti Prakash Tamang



Designation: DEAN, School of Life Sciences and PROFESSOR, Department of Microbiology, Sikkim University (central university), Gangtok 737102, Sikkim, INDIA

Areas of specialization: Microbiology of fermented foods and beverages focusing on culture-dependent and culture-independent techniques of microbial diversity, their nutritional profiles, functionality and health benefits.

Publications: Total numbers 116

Awards:

- (1) Gourmand World Cookbook Award, Paris for my book: “Himalayan Fermented Foods: Microbiology, Nutrition, and Ethnic values” in 2010.
- (2) National Bio-Science Award of Department of Biotechnology, Ministry of Science and Technology, Government of India in 2005.
- (3) United Nations University Women Association-Award, Tokyo in 1996.
- (4) North Bengal University Gold Medal in 1984