

Synbiotic-Assisted Modulation of Gastrointestinal Microbiota and its Effect on Human Health

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The growing concern with food habits and their relation to health prompted several studies in food science. The gastro-intestinal (GIT) microbiota responds to anatomical and physicochemical variations in the tract. This microbiota comprises of pathogenic, benevolent and advantageous. The composition and activity of the GIT develop with the host from birth and it depends on nutrition and life-style. It is involved in regulating metabolic pathways and physiologically connects the gut, liver, muscle, and brain. It is evident that the gut microbiota can be favourably modulated by synbiotic interventions to combat diseases and improve the human health. In recent years, the concept of functional foods has been emerged to examine food additives that may exert beneficial effects on the GIT microbiota. A most prominent class of functional foods in focus is synbiotics, which is a suitable combination of probiotics and prebiotics. They exert beneficial effects through four main mechanisms i.e. immune modulation, interference with potential pathogens, improvement of barrier function and production of neurotransmitters. Their host targets vary from the resident microbiota to cellular components of the gut-brain axis. Synbiotics are now being considered important tools to help maintain humans and animals in good health and in prevention and/or alternatives for reducing the risk associated to a number of diseases. However, relatively few effects have been supported by a battery of data from clinical trials. Owing to the fact malnourished children struggle to gain weight even on high-nutrient diets, a long-term feeding trial comprising of 80 tribal children of 2-5 years with synbiotics was conducted for its suitability to combat malnutrition-led health effects. It was revealed that the feeding of synbiotics @200 ml per child for 90 days exerted a positive effect on health parameters. It is concluded that regular feeding of synbiotics considerably reduce the risk of malnutrition-led mortality of tribal kids faced by developing countries.

Biography:

Dr. CD Khedkar is Associate Professor and Head, Deptt. of Dairy Microbiology and Biotechnology. He has two doctoral degrees to his credit, one in Microbiology and the other in Dairy Biotechnology. He has 27 years experience of teaching, research and extension. His field of specialization is in probiotics, prebiotics and value-addition of dairy products/food commodities. Till today eight doctoral and 15 postgraduate students have successfully completed their degrees under his guidance. He is the brain behind the development of a world-bank funded consortia-mode project aimed at sustainable rural livelihood security through integrated approaches. He attended several scientific conferences/seminars in India and abroad in the capacity as the Chairman/Lead Speaker. He has more than 150 scientific publications to his credit. He is bestowed with several awards/recognition for his scientific excellence and academic and extension activities to his credit.