



Probiotic Association of India

September, 2011 - 1st Issue

सत्यमेव जयते
डॉ विश्व मोहन कटोच
एन डी, एक एन ए फेलो, एक एन एन, एक एन एन, एक एन ए
सचिव, भारत सरकार
(स्वास्थ्य अनुसंधान विभाग)
स्वास्थ्य एवं परिवार कल्याण मंत्रालय एवं
महानिदेशक, आई सी एम आर
Dr. Vishwa Mohan Katoch
MD, FPMG, FAMS, FACS, FPA
Secretary to the Government of India
(Department of Health Research)
Ministry of Health & Family Welfare &
Director-General, ICMR



MESSAGE

I am privileged to convey my greetings to all the members of the Probiotic Association of India on the occasion of launch of its newsletter. This Society has been created with great ambition which should galvanize the research on probiotics in our country. This Society should prove to be the focal point of development in this area which should be driven by scientific evidence and needs. While this will promote a healthy growth of the industry as well, this academic body will certainly keep the needs of the people and solid scientific evidence as 'Mantra' of growth of the probiotics in India. I take this opportunity to convey my best wishes for all success in this mission.

(V.M. Katoch)
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Dated: 29th August, 2011

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MESSAGE

Probiotics have been the major focus of attention globally due to their immense health promoting potentials. These magic bugs have wonderful therapeutic properties which are well documented and well researched and hence have been rightly recognized as the vital health care concept of 21st century. Probiotics are now gaining a foothold in India which has recently emerged as a potential probiotic market with huge commercial stakes. However, despite a wealth of knowledge on probiotic foods, we find that probiotics do not fit into the health care scenario in our country due to lack of awareness and misconceptions amongst the common Indian consumers about the enormous potentials of probiotics. It gives me a great pleasure to inform that PAI is going to launch its first inaugural issue of 'Probiotic News Letter' electronically, a first of its kind in the country in order to sensitize the mass Indian population towards the 'probiotic concept' and to create public awareness on the enormous health benefits associated with probiotic foods. I wish all the success to this initiative from PAI and hope the launch of the "Probiotic News Letter" will help in boosting the probiotic movement in the country so that all the health benefits of probiotic foods reach the target Indian population with an open mind.

(A.K. Srivastava)
President, PAI

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Probiotic Association of India (PAI) - An Introduction

The interest in probiotics and probiotic foods has grown enormously during the past several years across the world due to multiple health promoting functional properties associated with probiotic cultures. Probiotic concept is now gaining momentum in India too with the entry of major global players in the probiotic production and marketing. With the growing awareness, health conscious Indian society is getting receptive to 'Probiotic Culture' and finds these products very attractive bioactive ingredients by serving as prophylactics or biotherapeutics for promoting human health and well being as well as management of specific diseases. However, still there is a long way to go before these probiotic foods change the Indian mind set and reach the common man to explore their full health benefits. Despite a wealth of knowledge on probiotics, we find that probiotics do not fit into the healthcare scenario in India as effectively as in other developed countries. Moreover, there are certain misconceptions and myths associated with probiotics that is creating confusion in the minds of Indian consumers with regard to their safe use for health applications. The situation is further complicated due to non availability of regulatory quality control standards for probiotic foods in India. Although, Indian guidelines for probiotic cultures and foods have recently been launched by ICMR in collaboration with DBT and put on their respective web sites for public reaction, it is going to take a while before their implementation at the governmental level. In the absence of any regulatory standards, there would always be a possibility of spurious and ineffective products with false claims entering the market that can shatter the confidence of Indian consumers in probiotic products. Under the present situation prevailing in the country, the Indian consumer is in dilemma about the acceptability of probiotic foods due to gaps in the knowledge about the credibility of health claims associated with these value added products chiefly attributed to 'lack of awareness' on the purported health benefits of probiotics. How do we overcome these gaps? How do we make probiotics popular? Maybe by creating a 'platform' where doctors, scientists, manufacturers, patients, health professionals etc. can 'cross-talk'. It was, therefore, considered highly appropriate that all the stake holders including R & D Scientists, Medical practitioners, Clinicians, Nutritionists along with the industry personnel involved in probiotic research, product development and marketing join hands together and work as a team to promote probiotic food products and formulations in the country for the benefit of the large Indian population. Realizing the immense potential of probiotics and their relevance in meeting the nutritional and health care

requirements from the national perspective, NDRI, Karnal took an initiative and formed a National Core Group on probiotics and its first meeting was held at NDRI, Karnal on 5th March, 2010 to discuss some pertinent issues related to probiotic status in India. The 2nd meeting of the Core Group was held at NASC complex, New Delhi on Nov 15, 2010 with major focus on the role of industry in carrying forward the probiotic mission in the country along with R&D institutions involved in probiotic research to foster the creation of a healthy society in the country through probiotic interventions. As a follow up of the outcome of these meetings, NDRI was entrusted with the responsibility of getting this National core group on probiotics as a registered society for smooth conduct of its activities and effective dialogue with the government on policy matter on all the vital issues related to probiotics in the country. Finally, with the active and wholehearted support and cooperation of all the members of the National Core group on Probiotics, PAI was got registered as a society with effect from Dec. 8, 2010. With the registration of PAI, the probiotic core group has now acquired a legitimate status and it will now be better equipped to launch probiotic movement in the country more vigorously so that the claimed health benefits associated with probiotics and probiotic foods reach the mass Indian population effectively. The creation of PAI at this juncture is timely and quite appropriate in the context of present probiotic scenario in the country and it is a matter of great satisfaction and pride for all the stakeholders involved in probiotic research and product development and marketing that now they have a platform to put forth their case on any policy related issue on the subject forcefully at the government level and hence will be able to protect the interests of all the concerned parties including the industry and the R&D establishments involved in probiotic work, product development and marketing in the country. Being purely a scientific body without any commercial interests, PAI is committed to achieve its mission and all other obligations towards the promotion of probiotic concept in the country with complete transparency so that the novel health benefits associated with these magic bugs reach the target Indian population without any discrimination. The main focus of PAI would be to create awareness amongst the vast Indian consumers about remarkable health potentials of probiotics and to explore these strains with proven efficacy in development of novel functional foods for disease management and general health care that eventually will help in creating a healthy society in the country.

Probiotics for Human Health - A Journey from Past to Present

V. K. Batish, Sunita Grover and A.K.Srivastava

Probiotics have been traditionally used by man as the key component of his diet since time immemorial to keep him fit and healthy by protecting his gut against common diseases. These friendly bacteria, which include *Lactobacillus* and *Bifidobacterium* - the two key members of probiotic group having a variety of health promoting functions, are recognized as the latest buzzword on the health scenario across the world. Probiotics could just be the word with great hype to open the door to optimal health. The rapid growth and demand for probiotic foods particularly dairy based is largely attributed to

growing awareness among the consumers about linkage of diet with general health. At the very foundation of our health and well-being lies the complex ecosystem of our intestinal microbes known as commensal 'gut microbiota' that play an important role in proper gut functioning and in the process supplying us with additional nutritional value from our food, protecting us against intestinal infections and contributing to the development of our immune system. However, the normal balance of the commensal gut microflora can be disturbed by the dietary intake and during medication due

to excessive use of antibiotics / drugs through oral route resulting into dysfunctioning of the gut with serious health implications. It is here, probiotics come into the picture and can rescue us from the onset of such gut related diseases by restoring the normal balance of gut microbiota, boosting gut immunity and strengthening the mucosal barrier function. It is now well recognized that metabolic inflammatory disorders associated with the malfunctioning of human gut such as diarrhoea, IBD, ulcerative colitis, peptic ulcers, crohn's disease, constipation along with lactose intolerance etc. and other chronic life style diseases such as diabetes, rheumatoid arthritis, obesity, colon cancer, hypertension and allergies etc. can be alleviated through consumption of probiotic cultures directly or their food formulations. Probiotics can be used either as prophylactics or as biotherapeutics as an effective alternative to drug therapy. As compared to many pharmaceutical agents, probiotics are well tolerated by human anatomy and are extremely safe.

Although, interest in probiotics and probiotic foods particularly fermented dairy based products has grown enormously during the past several years, it is not a new concept. Man has been practicing the same for maintaining healthy status since prehistoric days without knowing the scientific basis of the concept. It prominently figures in Hindu scriptures and even in bible. The very first probiotic recorded during the prehistoric era was the fermented milk indeed. The role of fermented milks in human diet and health was known even in Vedic times. However, the scientific credibility of the concept got a boost with the acceptance of theory of longevity proposed by Ellie Metchnikoff in 1908 in his book "Prolongation of life" wherein he attributed the long life of Bulgarians with the regular consumption of fermented milks such as bulgarian yoghurt. The probiotic concept gained momentum with the launch of Yakult drink for promoting health of Japanese in 1930 by M. Shirota. Finally, as the scientific basis of probiotic functionality with regard to specific health claims associated with specific probiotic strains began to be understood at the molecular level, it was recognized as the vital health care concept of 21st century because of immense health promoting physiological functions expressed by probiotics.

Predominantly, during the past few decades, the beneficial effect of specific strains in preventing or treating intestinal disorders has been substantiated by well-controlled clinical trials. Increasing evidence, including human studies, has also supported the immune-modulatory role attributed to given lactic acid bacterial strains. They are being used as growth promoters, for lactose intolerance, anti tumour and anti-cholesterol aemic effects, for relief from bowel syndrome and other innumerable purposes. With the current focus on disease prevention and the quest for optimal health at all ages, the probiotics market potential is enormous. However,

much of this growth will also depend on the reliability of claims that these products will bear. Therefore, the legislation will have to provide clear cut rules and regulations which will depend on measurable biomarkers and criteria based on scientific evidence. These commercial and legislative needs will hopefully provide scientists with the resources necessary to conduct the multidisciplinary research required to establish facts and mechanisms of action for carefully selected probiotic strains, then only health professionals will be in an ideal position to help and guide their clients toward appropriate prophylactic and therapeutic uses of probiotics that deliver the desired beneficial health effects. Although probiotics offer us the choice of a natural means of overcoming certain illnesses, they can't be considered a panacea for health, nevertheless, they can be incorporated into a balanced and varied diet to maximize good health and wellbeing. However, probiotics as a concept is still associated with large body of unsubstantiated claims and linking specific health benefits to probiotic functionality is the biggest challenge. Although, there is suggestive evidence for each of these functional claims, the exact molecular mechanisms involved therein remain by and large unknown. Hence, the journey of the probiotics continues unabated and it is a long way till it culminates into the deliverables in a big way for the benefit of the mass target Indian population and helps in creating a healthy society in the country. Nevertheless, the domain of probiotics research has been expanding exponentially and the recent advancements made in whole genome sequencing of some proven candidate probiotic strains with novel functions along with functional genomics, proteomics, transcriptomics, metabolomics, metagenomics and other techniques are likely to throw new insights in understanding the functionality of probiotics in the human gut. The day is not far off when designer probiotic foods customized as per the needs of the consumers will be made available on order. Hence, the future of probiotics and dairy based probiotic foods as biotherapeutics in the management of specific diseases effectively in the target human population is very bright and it will continue to be a grey area of considerable commercial interest from human health perspective at least in the coming few decades ahead.

Through this newsletter, PAI will keep on updating the readers with the latest developments in the area of probiotics as well as help in sharing the research outcomes of different laboratories in India which can form a platform to formulate collaborative programmes. We hope you will enjoy reading this issue and will find more information in our next newsletter which will come out in the month of March, 2011. We are also providing the list of PAI members with their E mail IDs so that all our readers and members can communicate with each other and form a strong platform to share probiotic research.

Request for Enrollment of New Members of PAI

In order to strengthen its organizational structure and manpower, PAI looks forward to all the prospective candidates belonging to different professions involved in probiotic research and industry to come forward and be active registered members of this association. The details of the membership fee and the prescribed membership

forms can be collected from Dr. Sunita Grover, Treasurer or Dr. V. K. Batish, Secretary, PAI, Molecular Biology Unit, Dairy Microbiology Division, NDRI, Karnal(Haryana) -132001. The membership fee in the form of cheque/draft in favor of Treasurer or General Secretary PAI along with the duly completed registration form may be sent to Dr. Sunita Grover.

The PAI Family (Members Details)

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From Editorial Board

The editorial Board of PAI, Probiotic Newsletter is immensely pleased to welcome its readers to access the launch of inaugural issue of Probiotic Newsletter. This issue is primarily intended for introducing the PAI, its scope and relevance from National perspective along with organizational set up, office bearers and members of PAI. However, we now invite our readers to contribute

articles related to probiotics for inclusion in the subsequent issue of the Newsletter. These articles / concepts / News items (upto 500 words) should be preferably supported with high quality photographs and can be submitted directly to chief editor with copy to other editors who will review and select the articles for inclusion in the Newsletter. We are shortly going to launch the website also.

Contact us

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