

Technological Advancements in Probiotics: A Review

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Abstract—*The World Health Organization defined probiotics as “Live microorganisms which when administered in adequate amounts confer health benefits for the host”. Probiotics play a major role in maintaining human health and are explored commercially in food processing extensively. Their benefits to human and animal health have been proven in hundreds of scientific research. However, probiotics are very sensitive and fragile and are easily affected by environmental stresses such as acidity, oxygen, heat and also by downstream processing. Thus, causes the quantity of probiotics to decline and influences the function greatly. The viability of probiotics is a key factor for developing probiotic foods. The technological demands placed on probiotic strains are great and new manufacturing process and formulation technologies are required. The technological information about innovation worldwide in probiotics is reviewed. A strain is commercially demanded for the technological and health properties. The technologies currently applicable are microencapsulation, encapsulation, genetically engineered probiotics, fermentation, freeze- drying, recombinant technology, double check capsulation technology, cell immobilization, nanotechnology etc. New technologies have been developed to enable high cell yield at large scale and ensure probiotics stability for a long period in food. The technological functionality for safety, applications, limitations and new trends aspects in technological development of probiotics is presented. Current technologies on novel probiotics formulations have provided promising results. Future technological prospects exists in innovations finding solutions for probiotics with improved stability and viability.*

Keywords: *Probiotics, Technologies, Viability, Stability, Health benefits.*