

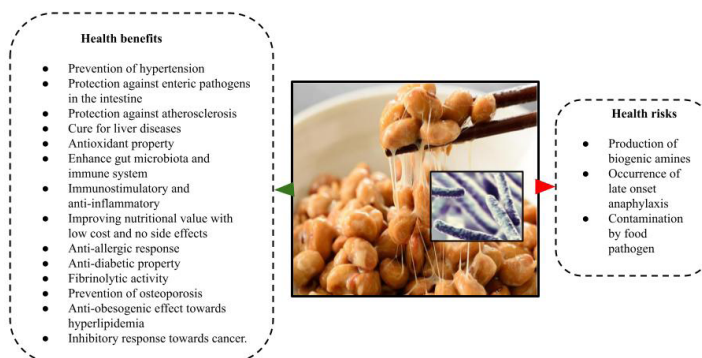
## **Impact of Bacillus in fermented soybean foods on human health**

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**Purpose:** Fermented soybean Foods (FSF) is popularly consumed in the South-East Asian countries. Bacillus species, a predominant microorganism present in these foods have demonstrated beneficial and deleterious impacts on human health. These microorganisms produce bioactive compounds during fermentation that have beneficial impacts in improving human health. However, the health risks associated with FSF: food pathogens, biogenic amines (BAs) production, and late onset anaphylaxis remain a concern. The purpose of this review is to present an in-depth analysis of positive and negative impacts as a result of consumption of FSF along with the measures to alleviate health risks for human consumption. **Methods:** This review was composed by scrutinizing contemporary literature of peer-reviewed publications related to Bacillus and FSF. Based on the results from academic journals, this review paper was categorised into: FSF, role of Bacillus species in these foods, process of fermentation, beneficial and adverse influence of these foods along with methods to improve food safety. Special emphasis was given to the potential benefits of bioactive compounds released during fermentation of soybean by Bacillus species. **Results:** The nutritional and functional properties of FSF are well-appreciated, due to the release of peptides and mucilage, which have shown health benefits: in managing cardiac disease, gastric disease, cancer, allergies, hepatic disease, obesity, immune disorders and especially microbial infections due to the presence of probiotic property, which is a potential alternative to antibiotics. Efficient interventions were established to mitigate pitfalls like the techniques to reduce BAs, food pathogens and by using a defined starter culture to improve the safety and quality of these foods. **Conclusion:** Despite some of the detrimental effects produced by these foods, potential health benefits have been observed. Therefore, soybean foods fermented by Bacillus can be a promising food by integrating effective measures for maintaining safety and quality for human consumption. Further, in vivo analysis on the activity and dietary interventions of bioactive compounds among animal models and human volunteers are yet to be achieved which is essential to commercialize them for safe consumption by humans, especially immunocompromised patients.

**Fig.1: Health benefits and risks of *Bacillus* in fermented soybean foods on human health**



## Biography

Elavarashi E, is a recipient of SRU Chancellor Fellowship Grant for full-time PhD programme in April 2009 at Sri Ramachandra Institute of Higher Education and Research (SRIHER), Chennai, India. She has done PhD in Microbiology on 'Phenotypic and genotypic characterization of dermatophytes from clinical specimens using novel markers'. Now her current research interest is to isolate potent probiotic *Bacillus* strains from various sources like fermented soybean foods and soil. She has worked on *Bacillus* since 2019, isolated *Bacillus* isolates from various sources and evaluated extracellular enzyme activity, biofilm formation and antimicrobial activity of *Bacillus* spp. against pathogens. Recently, she has analysed the complete genome of *Bacillus* and is yet to be published.