

Applications of Probiotics in Women's Health

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Abstract

A FAO (2004) report states that India is known for often treating common ailments primarily with foods. Nine out of ten urban Indian consumers have been reported to generally choose foods based on health and wellness benefits. Fermented milk products containing healthy lactic acid bacteria like *dahi* and butter milk are commonly recommended by the elders in the family for control of diarrhea, dysentery and common intestinal ailments. Deliberate incorporation of selected strains of healthy bacteria called as "probiotics" became more popular in last 2-3 decades due to increased evidences of clinically proven health benefits of probiotics. Among various health effects of probiotics, a few strains have been found to have special benefits in women's health. These beneficial effects are mainly related to maintenance of health vaginal flora and there by control many ailments related to urogenital tract, mainly bacterial vaginosis (BV). BV is said to be the major problem because it directly affects women's quality of life and health care systems. Several strains of *Lactobacillus* spp. have been found useful restoring a normal vaginal flora that also reduces the risk of urogenital infections such as candidiasis, genital herpes, HIV, etc apart from bacterial vaginosis. These urogenital infections affect an estimated one billion women each year. The size of this problem and the increased prevalence of multidrug resistant pathogens make it imperative that alternative remedies need to be found. Probiotics have therefore come out as a potential alternative to drug and more than 25 brands of commercial probiotic preparations are available in market at present.

Apart from urogenital health, probiotics also improve digestive and immune systems which help protect the consumers from other problems. Common problem of iron and vitamin deficiencies in young girls and pregnant women can also be taken care by selecting a probiotic formulation with appropriate supplements. A study was done at Anand Agricultural University to develop an ointment for treatment of Bacterial vaginosis using our own probiotic isolate of Indian origin, *Lactobacillus helveticus* MTCC 5463(V3). Comparison of ready-made emulsion from market and laboratory made emulsion with different concentrations of selected strain was done by determining viscosity, pH, viability and rate of freeze thaw stability. The market cream formulations had pH value ranging from 3.69-6.95 while laboratory made probiotic cream had pH value ranging between 4.4 - 5.38. The viability of probiotic culture in formulation was ranging from 9.83 to 10.20 log cfu/ml. The developed cream with MTCC 5463 as probiotic was able to inhibit indicator organism's *G. vaginalis*, *Candida albicans*, *E. faecalis*, *S. aureus* and *E. coli*. The cream stored at room as well as refrigeration temperatures was found to be thermodynamically stable. The sub-acute vaginal toxicity study conducted in rabbit model showed that cream made was giving no side effects and can be deemed as safe for human clinical trials. The presentation gave an overall review of application of probiotic preparations for women's health with a special focus on research work carried out at the laboratory.

Keywords: Bacterial vaginosis, probiotic, *dahi*, *Lactobacillus helveticus*, *Lactobacillus* spp
