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Short Communication

Fermented Products vs Probiotic Supplemented Drinks as Biotherapies

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Gut microbiology holds a central pivotal point in maintaining good health and assist the immune system to fight the diseases. Human GI tract is estimated to be colonised by 1,000 different strains of bacteria. A healthy consortium of gut microorganisms is required to maintain homeostasis especially when usage of antibiotics alters the digestive environment, decreasing the number of good bacteria and helping the pathogens and opportunists like yeast to proliferate. What we eat is what we get. Our diet can influence the bacteria in our body, in both positive and negative ways. Nutrients such as vitamins, amino acids or dietary fibre that are consumed by the host are assimilated and converted into other metabolites by intestinal microbes. Fat rich foods and refined carbohydrates can create intestinal dysbiosis. Incorporating probiotic bacteria (Live microorganisms that show health benefits) containing rich foods in our daily diet can reap the benefits of healthy gut.

Probiotic foods contain a variety of bacterial genera. Some of the most common genus and their species which have proven clinical evidences are given below:

- *Lactobacillus*: *Acidophilus, casei, sporogenes, plantarum, rhamnosus, reuteri, fermentum*,
- *Bifidobacterium*: *Bifidum, infantis, longum*
- *Streptococcus*: *Thermophilus lactis, cremoris*,
- *Bacillus*: *Coagulans, enterogermina*
- *Enterococcus*
- *Sacharomyces boulardii* (yeast)

There are two ways to obtain more of good bacteria into your gut: through fermented foods, or dietary supplements. Fermented foods are the most natural source and are categorised as Dairy and Non-Dairy products.

The natural chemical changes brought by bacteria/yeast during fermentation result in lactic acid formation when bacteria feed on sugar and starch, and transform the taste, palatability and texture of the product. This process sets up an environment that preserves the food and also stimulates beneficial enzymes, vitamins, and fatty acids, as well as various species/strains of other healthy bacteria.

Most preferred vector for probiotic (LAB) delivery is dairy based product and fermented milk products are known as cultured dairy products. Dairy foods support good growth of probiotic species and their matrix protect the probiotic bacteria and provide stabilisation even during storage.

The marketing excellence has made Yoghurt as one of the most preferred dairy based probiotic drink prepared by symbiotic fermentation of *Lactobacillus bulgaricus* and Streptococcus thermophiles. Not necessarily, all yoghurt formulations may cater to the health benefits at the same level. The addition of sugar and flavours to yoghurt can also reduce the probiotic effects of live cultures.

Dahi or Curd is a very common dairy fermented product of India. It is rich in *Lactobacillus* and supports the gut in digestion. Bacterial members associated with dahi belong to the genera of *Lactobacillus*, *Lactococcus*, *Leuconostoc* and Yeast. Probiotic dahi can be selected because it is loaded with probiotic strains of *Lactobacillus* and *Bifidobacterium*, which provide better health benefits.

Traditional Buttermilk consumed widely in Indian subcontinent is a good source of probiotic and balances the pH of the gut. Cheese, Kefir, Acidophilus yeast milk, Koumiss etc. are made from various

lactic acid bacteria (LAB) and yeast like *Saccharomyces*. Whey also offers suitable matrices for the growth and viability of probiotic microorganisms and, therefore, one can foresee better prospect in developing probiotic beverage made out of this nutritious dairy waste. It's a blend of nutrition and antimicrobial compounds which get enhanced when combined with probiotic bacteria like lactobacillus [1].

The natural fermentation creates non- dairy probiotic rich foods like Sauerkraut (fermented cabbage), Miso, Tempeh, Pickles, Idli and Dosa (Fermentation of rice and lentils). These products are used since centuries as healthy products across the world [2]. However, some food products act as probiotics because of their fermentation process only.

Probiotic rich foods are healthy choices, however treating a specific illness like inflammatory bowel disease (IBD) may require the use of probiotic supplements to ingest enough cells that can make a rapid difference in the gut. They are sold as OTC and may contain both prebiotic ingredients and probiotic culture which are assumed to be more effective. Example 'Yakult' containing *L. casei shirota*, and 'DanActive' by Danone contain 10 billion cells of live and active *Lactobacillus casei* and many others.

Specific bacterial species and their strains should be preferred when dealing with a particular disease, because specific strain depicts precise function which is not observed in other strains of same species [3]. Looking at labels of various products in the market which read 'contains live/active cultures', one can see the types of probiotic bacteria present.

The shortcoming of these supplements is the dose i.e. CFU/ per day. The optimal dose should reach the intestine.to show its favourable effect. However, the exact bacterial concentration is lost during manufacturing, and storage. The addition of sugars, flavours inhibits the actual probiotic property when ingested. The use of probiotic ice-cream and probiotic chocolates cannot exert good probiotic properties, until consumed on a regular basis, although the cultures are encapsulated, which protect them from gastric acids. How could a sugar loaded, dense food product help in lowering cholesterol, weight loss as advocated in health benefits of commercial probiotic products? These supplements cannot be recommended daily as they may lead to unwanted side effects like acidosis and bloating. These supplements are not advised for HIV patients, hypertensive and diabetics, immunocompromised people and should be consumed on doctor's advice. Besides that, the reconstituted spray dried cultures present in sachet form cannot provide the same benefits as live culture, as heat kills the bacterial cells.

There is no recommended guideline for qualitative and quantitative analysis of fermented foods for daily intake. The quantity and frequency of consumption of these varies from person to person. But on an average, consumption of probiotic rich food makes the gut environment more conducive to intensify the propagation of normal and commensal microbiota. Fermented indigenous foods form the part of regular diet since civilisation and symbiosis of microbes and nutrients brings a healthy and safe gut. The better focus should be on indigenous fermented foods which are better assimilated and promote the commensals.

Bibliography

1. Goyal N and Gandhi DN. "Whey, a carrier of probiotics against diarrhoea" (2008).

2. Sanders M E., *et al*. "Shared mechanisms among probiotic taxa: implications for general probiotic claims". *Current Opinion in Biotechnology* 49 (2018): 207-216.

3. Vijaya Kumar B., *et al*. "Trends in dairy and non-dairy probiotic products - a review". *Journal of Food Science and Technology* 52.10 (2015): 6112-6124.

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