Technology for Functional Chalta-Whey Beverage

Whey is the liquid portion remaining after preparation of paneer and cheese. Based on its high nutritional value, many dairy industries have generated the best way to utilize whey properly instead of disposing it off as a waste. Various product development using whey as basic ingredient has been done such as whey protein concentrate, whey protein isolates, whey powder, lactose, high protein whey powder, demineralized whey powder, granulated high protein powder, etc. which can further be used in infant foods, body building products, weaning foods, bakery products, beverages, confectionary products, dairy products and pharmaceuticals.

Similarly, utilization of fruits and/or herbs to prepare beverages may be a best way to increase the antioxidant properties because fruits are the major source of bioactive compounds with highest antioxidant rates, containing wide range of polyphenols, like flavonoids etc. There are many underutilized fruits also which are full of bioactive compounds but have limited known uses. One of them is chalta (*Dillenia indica* L.) distributed in sub-Himalayan tract including forests of Kumaun to Garhwal, Assam, North Bengal, Bihar, Orissa, Madhya Pradesh and Gujarat. Preparation of whey-based beverage using wild edible fruits containing high antioxidant properties may increase the therapeutic, prophylactic and nutritional properties of the liquid whey.

Whey is the biggest part of the dairy waste with higher Biological Oxygen Demand value i.e. a potent pollutant. So, utilizing whey for the preparation of beverage using underutilized fruits rich in antioxidants and other additional functional components could be seen as an effective way to develop a functional beverage as well as getting rid of potent pollutant. So, by applying appropriate methodology and using other functional ingredients, a healthy drink could be prepared. Considering the above facts technology was developed for the preparation of functional whey-based beverage with low lactose content and high antioxidant potential by administering chalta fruit extract. This invention particularly describes the procedure for the preparation of hydrolyzed milk using lactase enzyme by providing appropriate treatment conditions. The technology also describes the process for preparation of extract from chalta fruit by enzymatic treatment using combination of enzymes. More particularly, it also describes about the optimized quantity of ingredients to be utilized for the preparation of whey-based functional chalta beverage.

Advantages:

1. Development of whey-based beverage using chalta fruit extract will not only add value to the underutilized chalta fruit but also prevent environmental pollution from the dairy waste i.e. whey.
2. Utilization of dairy waste in the form of whey and underutilized fruit will yield a beverage at lower price i.e. higher profit margins.
3. Products which are antioxidant rich are in demand of well educated and aware customers as they believe that such products create a hope to be healthy and free from diseases.
4. Developed whey-based functional beverage, with low lactose content and enriched with bioactive compounds from natural source is suitable for lactose intolerant people.