
Therapeutic Ingredients Based Whey Beverages

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INTRODUCTION

Milk is a complete food with nine major nutrients viz. Calcium, Protein, Potassium, Phosphorus, Vitamin D, Vitamin B12, Vitamin A, Riboflavin (B2) and Niacin ((National Dairy Council). Children need the milk for their healthy growth good health, but they usually avoid natural taste or flavour of regularmilk and milk products. To overcome this issue, flavours should be added to milk and other dairy products. As we know, India is the largest producer of milk with annual milk production around 187.7 MT (NDDDB 2020). So, this value addition to milk and milk products will increase its value in the market. There are already many flavoured milk products in the market, but most of them contain artificial flavours and colours that may be quite unhealthy for us, especially children.

On the other hand, people are becoming more health-conscious day by day. Also, in India, there are many spices and herbs, which our ancestors used to add in their food, but now, these spices and herbs are being replaced by artificial and unhealthy flavours. But now, people are moving back to healthy and nutrition-rich food. If we talk about milk products, whey beverages are one of them.

Whey is the watery part and a byproduct that remains after the separation of coagulated milk products like cheese. *In manufacturing these products, only 10% to 20% milk portion is recovered as the desired end*

product and rest 80% to 90% remaining liquid is whey where most of it is disposed as a waste, which is very sad. Whey can be sweet or acid depending upon the type of casein coagulation. Whey protein contains less than 1% of dry matter.

Whey can be used as a very healthy beverage. Whey liquid has protein, calcium, magnesium, iron, sodium, potassium, carbohydrates and low fat (0.4 g per 100 g whey). This excellent nutrition value makes it healthy for the consumption of children to old age persons. The old ages and health-conscious people who avoid milk due to the risk of fat and cholesterol can drink whey drinks without thinking twice.

Production of whey-based beverages was started in 1970, and the mixing of native, acid or sweet whey with different additives like fruits, vanilla, cocoa, chocolates etc. develops a variety of whey-based beverages. There are also fortified whey beverages in which vitamins and other nutrients are fortified to enhance its nutrition value. Instead of artificial flavours, colours and additives, the addition of natural healthy flavours or spices can improve the nutrition and taste of whey drinks, which increases its market value resulting in economic benefits. Many healthy ingredients like cardamom, fennel, cinnamon, basil, Cumin Cumin, coriander, jaggery, and honey should be added to make sweet and salted whey beverages which not only give a good taste but also have therapeutic properties to cure

many diseases. The following healthy ingredients not only convert the whey into a delicious beverage but also have therapeutic benefits:

Cardamom:

Cardamom is a highly aromatic and flavorful herb, which helps in curing many diseases. It can help in the treatment of stomach problems by flushing out the toxins from our body. Cardamom is also found beneficial in weight loss by boosting metabolism. Cardamom helps in curing cough and cold. It improves our blood circulation and checks the blood sugar level. It is also useful in treating sleep troubles. On the other hand, this therapeutic spice gives a lovely aroma and flavour (NDTV food). It can be used in whey to convert it into a delicious and therapeutic beverage.

Fennel:

Fennel is a traditional herb full of medicinal properties. It is highly nutritious. It helps in reducing bad cholesterol. Also, fennel seeds have vitamins A, Vitamin C, which is not present in natural whey liquid. It improves digestion and is highly beneficial for skin and hair, regulates blood pressure, reduces water retention, purifies the blood, improves eyesight, reduces asthma symptoms and keeps cancer away (NDTV food). Also, its high aroma and flavour can give a very tasty whey drink.

Cinnamon:

Cinnamon is a potent herb, which carries a lot of medicinal properties. It is loaded with anti-diabetic effect, increases appetite, full of antioxidants, anti-inflammatory properties. It reduces the risk of heart attack by lowering bad cholesterol (LDL) and increasing good cholesterol (HDL). Cinnamon also helps in curing bacterial and fungal infections (source: healthline.com). This is why; Adding cinnamon in whey drinks can be a very healthy choice.

Holy Basil (Tulsi): Basil is a herb in the mint family. It not only adds a great flavour to the meal but also provides health benefits. It can add minerals, vitamins, beta-carotene, beta-cryptoxanthin and a lot of antioxidants in whey. It supports liver health, fights cancer, makes the skin and hair beautiful, reduces blood sugar, purifies the blood, promotes cardiovascular health, boosts mental health, reduces inflammation and swelling, and has many more benefits (Medical News Today). Tulsi extract can be easily incorporated into a whey drink, which will also increase its market value.

Coriander and Cumin for salted whey beverages:

These can be used for salted whey beverages for a delightful aroma and flavour. All the Coriander plant parts are edible, but the fresh leaves and dried seeds are mainly used for traditional cooking. Coriander has Carbohydrates, protein, vitamin C, vitamin A, vitamin K as well as trace amounts of potassium, manganese, beta-carotene, folate, lutein, zeaxanthin and choline (Medical News Today). Coriander has a good source of antioxidants, anticancer effects, improves skin health and has antifungal & preservation properties. On the other hand, Cumin Cumin has protein, carbohydrates, calcium, iron magnesium, phosphorus, potassium, sodium, thiamine, niacin, vitamins (A, C, E, K, B6), zinc and very low sodium, saturated fat and cholesterol (source: organic facts). It aids digestion, improves immunity, relieves respiratory disorders, improves skin health, reduces the risk of diabetes, lowers cholesterol, improves bone health, soothes inflammation, cures a cold, improves memory and has anticancer potential. The salted beverages should be produced with rock salt or pink salt for enhanced benefits.

Jaggery and honey for sweetness in whey beverages:

There are many sweet whey beverages where mainly sugar is used for sweetness, but it can be replaced with jaggery or honey for enhanced benefits. Jaggery and honey contain minerals like calcium, phosphorus, iron and micronutrients. Honey is also rich in vitamin B, vitamin C and potassium, whereas jaggery has a fair amount of copper, magnesium and iron. These ingredients improve digestion,

memory, prevent anaemia, detoxify the liver, and make the immune system healthy.

Conclusion :

All these therapeutic ingredients are readily available and have a lot of medicinal benefits. Also, whey has a lot of nutrients, and incorporating these ingredients can give more and more health benefits by incorporating the nutrients and vitamins, which are absent in natural whey liquid.

