Drinking yoghurt product produced with Moringa oleifera dried leaf powder extract and Phyllanthus emblica fruit extract.

Background

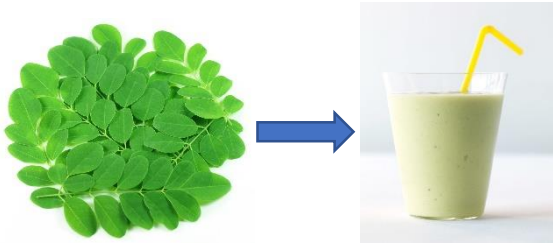
Dietary choices of many social segments in the modern day are heavily affected by their busy lifestyles and so they lack the required levels of Ca, Zn and antioxidants in them. Moreover, some people choose vegetarian diets as they believe it is healthier and morally acceptable. Due to the deficiency of certain nutrients in some vegetarian diets, people who are strict vegetarians, face nutritional deficiency disorders. Calcium deficiency is one such major nutrient problem in Sri Lanka and other countries. Nutrient fortification has brought an impressive solution for the stated problem. This can be taken as a responsibility as well as an opportunity by food producers; to produce goods that would fulfil a high percentage of RDI of Ca by a single portion. If those products could be enriched with antioxidants, would suit the busy lifestyles of modern employees.

Mineral fortification in dairy products has become the major reason to make dairy products dominant in global functional foods market. As dairy products are a complex food matrix, feasibility of mineral addition has to be considered and high fortification levels are challenging. Applications become successful only with the right selection of the appropriate mineral compound combined with the correct incorporation method.

Selecting plant sources to be incorporated in dairy products is extremely challenging, as it is difficult to get all necessary nutrients 'effectively' by them. Phytochemicals like phytates, oxalates, tannins and other anti-nutritional factors in plant materials reduce the bioavailability of minerals , Besides, milk is already considered a good Calcium source by the public, and to fortify it further with Ca; have to find extremely rich plant oriented Ca sources with better bioavailability and easy extraction processes.

Technical Problem

In this product, aqueous leaf extract of *Moringa* was incorporated as it was soluble in yoghurt mixture rather than powder used to integrate by other inventors. Since the solubility is high, it provides an ideal texture for the product.



Technical Solution

The major objective of inventing this product was to fulfil 50% of Reference Dietary Intake of calcium at one serving. The above prior arts provide only a historic background for using *Moringa oleifera* leaf powder extract or *Moringa oleifera* leaf powder as an ingredient for producing yoghurt and drinking yoghurts. But those were not fulfilling 50% RDI of calcium at one serving. The invented product has produced recovering this issue in a successful manner.

When using *Moringa oleifera* leaf powder, technical problems can be arisen due to blockage of those powder particles in machineries like homogenizer and pipe lines. Aqueous extract gives a better solution for that as it is soluble in the yoghurt mix.

A product in the market is highly affected by the preference of the consumer. *Moringa oleifera* leaves contain bitter compounds that result bitter taste in the final product. The invented product has been produced incorporating blanched *Moringa oleifera* leaf powder extract in order to minimize the bitter taste. This pre-processing (i.e blanching) step had not been followed in any of the prior arts discussed above.

This invented product has been produced without addition of gelatin like stabilizers. Today, many of the dairy companies are seeking for gelatin free products because most of the consumers especially vegetarians refrain from buying products containing gelatin.

Advantageous Effects

- Plant based product (Natural product) which fulfils 50% RDI of Ca, antioxidants and 100% ascorbic acid.
- Cost effective.
- Shelf life is 14 days without addition of preservatives.
- Can manufacture under the same production line (Only preprocessing steps for the plant extracts were needed).
- Minimum impact on colour, taste and shelf life.
- **Immunity boosting – Antioxidant rich – high Calcium dairy product.**

Industrial Applicability

Industrially the product can be developed in large scales to introduce to the Sri Lankan market as a natural product which fulfils 50% RDI of Ca, antioxidants and 100% RDI of Vitamin C. This product will be a good supplement to avoid Ca deficiency of Sri Lankans.

USJ has already filed the patent for this product.

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