

Effect Of Jeera Powder on the Sensory Attribute Of Carbonated RTS Functional Millet Based Whey Beverage

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ABSTRACT

The present scenario focus interest in nutrition and health awareness, consumers are increasingly seeking high- quality functional products with acceptable sensory attributes. The primary objective of current research was to optimize the process for developing Carbonated Ready-to-serve (RTS) functional millet-based whey beverage and observe the effects of different levels of Jeera powder (1%,2%,3%) on the sensory and physico-chemical aspects of Carbonated RTS functional millet-based whey beverage. Based on the analytical result, the functional beverage was optimized with 2%, Jeera powder and was subjected for shelf-life tests.

INTRODUCTION

Around half of the milk produced in India is used to make various traditional milk products through different processes such as coagulation, fermentation and desiccation. Out of total milk production 7% of milk is converted into fermented milk products.

Fermented milk products have been used for thousands of years to preserve milk or milk by-products, increase its portability, reduce perishability and enhance digestibility by breaking down lactose during fermentation. The nutritional importance of fermented milk products in human diets has been well- documented since ancient times. Fermented milk products have

been developed worldwide as a way to preserve, ranging from household to large scale production with the use of starter cultures. Fermented dairy products and probiotic bacteria have been found to reduce cholesterol absorption. Fermented can alter the taste and texture of food, improve its digestibility and has minimal effect on the mineral content of milk.

Whey is the greenish translucent liquid. Whey can be classified majorly into two types sweet whey and acid (sour) whey. Whey from cottage cheese manufacture is called “Acid Whey” since it is produced during acid coagulation of milk proteins and has a low pH and consequently longer storage life (Chandra, 1980).

Whey-based beverages are receiving notable attention as their market potential is increasingly improving. They may be especially useful in areas where food insufficiency is leading to certain nutrient deficiencies (Baccouche *et al.* 2013).

Spices are non-leafy parts of plants (including the bud, rhizome, fruit, seed, bark, or bulb) which are used as flavouring and spices, although many also have medicinal properties. They are primarily used to flavour foods, but they may also be used to preserve food to give nutrients and vitamins. India has long been recognised for manufacturing spices. More than 81% of the country’s entire seed spice output has come from Rajasthan or Gujarat. Cumin (*Cuminum cyminum*) is a blooming plant in the *Apiaceae* family that is locally known as “zeera”. Cumin is well-known for its anti-oxidant properties. Cumin seeds have been shown to prevent the production of stomach squamous cell carcinomas, indicating that the spice has anticancer properties. Cumin is one of the components in a natural anti-diabetic medication that has been shown to be beneficial of human trials. The bioactive constituents such as terpenes, phenols, and flavonoids confer medicinal properties to Jeera (Mnif & Aifa, 2015).

MATERIALS AND METHODS

The carbonated RTS Functional Millet based Whey beverage is developed with natural ingredients like one of which is Jeera powder., followed by carbonation without any artificial colours and flavours with intention to increase the nutritive and therapeutic benefits. The following studies were carried out at the Student Experiments Dairy Plant, Dairy Technology Department, Dairy Science College, Bengaluru, Karnataka veterinary, Animal and Fisheries Sciences University, Bidar.

Method

Preparation of RTS Functional Millet based Whey Beverage

The milk was heated to 90°C and cooled to 70°C. Citric acid is weighed and added as per the quantity of milk. It is left unstirred for 15 minutes, and then strained using a muslin cloth. The fresh whey is collected and pasteurized. Further it was cooled to 42°C and cultured with a probiotic culture *Lactobacillus acidophilus* was added at 1% to 1 liter of fresh whey followed by incubation for 3 hours at 40°C. Then after cooling it is used for product preparation. Functional ingredients are added to the fermented whey. Good quality Jeera powder was purchased from market and added in the beverage. The prepared beverage was evaluated by 9-point hedonic scale through sensory evaluation.

Optimization of the level of Jeera powder in development of Ready- To- Serve Whey Beverage

The whey beverage was incorporated with different levels of jeera powder (1%, 2% & 3%). The product was given for sensory evaluation and the best optimum level of Jeera powder was selected by the sensory panallists.

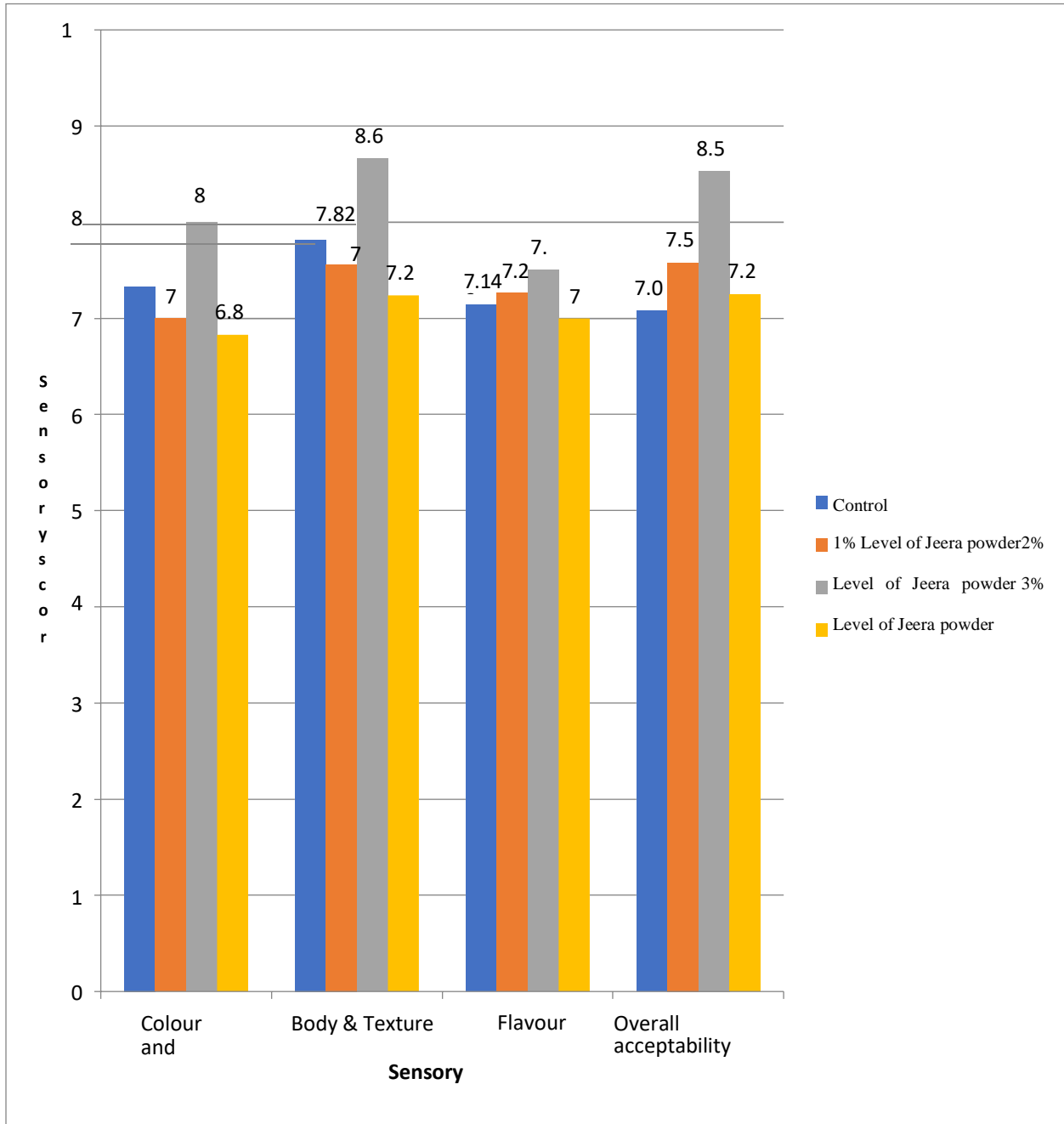
Sensory Evaluation

Sensory analysis was conducted by semi- trained sensory panellists who scored the RTS functional millet based whey beverage on the specified attributes based on the Hedonic scale. The average values of the scores provided by individual panellist in terms of colour and appearance, texture, flavour, sweetness and overall acceptability of the sample is represented in figures and tables.

RESULT

Level of Jeera powder (%)	Colour and appearance	Body and texture	Flavour	Overall acceptability
Control	7.33 ^b	7.82 ^b	7.14 ^c	7.08 ^c
1%	7.00 ^b	7.56 ^b	7.26 ^b	7.58 ^b
2%	8.00 ^a	8.66 ^a	7.50 ^a	8.53 ^a
3%	6.83 ^c	7.24 ^c	7.00 ^c	7.25 ^b
CD	0.386	0.386	0.386	0.407

Effect of Jeera powder on the sensory attributes of RTS Functional Millet based Whey Beverage



DISCUSSION

Jeera powder was added at varying levels of (1%, 2% and 3%). The carbonated RTS functional millet based whey beverage with 2% jeera powder received the highest overall acceptability score of 8.53 out of 9, while the control sample scored 7.08. Jeera being a spice has strong aroma and flavor, where 3% had a strong flavor 1% was mild. Therefore, a perfect blending level (2%) was chosen. 2% had an appealing colour of beverage.

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