IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

Synthesis Of Soya Milk And Cow Milk Exceed Yoghurt Quality

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Abstract; Synthesis of exceed quality yoghurt soymilk with cow milk of protein, unsaturated fatty acid, increases value of sensory evaluation, low sugar level, low cholesterol yoghurt application of lactobacillus bulgaricus culture in soymilk in cow milk effect of chemical composition studied. it was found more helpful creation to health. Particular diabetes patient. Mixing soymilk in cow milk improve sensory assessment score and progress the nutritious quality of yoghurt

key words: protein, cowmilk, soymilk, unsaturated fatty acid

I. INTRODUCTION

Currently increases cases of chronic disease due to unsuitable diet also increase the cases of cancer and other disease like hypertension, osteoporosis etc. due to this problem we have need to consume nutritious yoghurt in our daily diet.Yoghurt is fermented food product using the lactobacillus burglarious Cow's milk is the most usually used dairy in yogurt production and the global consumption of milk and iodine. On the other hand, soybean is consumed by a important portion of the world population as one of their most important sources of dietary protein and oil. soyabean improved in nutritive elements like protein, unsaturated fatty acid, isoflavones, mineral substances, free amino acids and polypeptides while covering only a small amount of saturated fatty acid and it lacks cholesterol or lactose. In Soybeans The adaptations of the protein present in the soybean to soy protein isolates is highly inefficient and expensive, and provide more efficient means of incorporating soy protein in the human diet. combine soymilk with cow milk yoghurt is more nutritious than normal yoghurt.in this mix yoghurt have a more protein comparatively normal yoghurt. This yoghurt contained high amounts of unsaturated fatty acids and essential amino acids.in mix yogurt high nutritious property than normal yoghurt because soymilk is rich sources of protein. In soybean sugar is absent so after mix milk for yoghurt. Hence decrease sugar level in mix yoghurt.so that it beneficial to diabetic patient

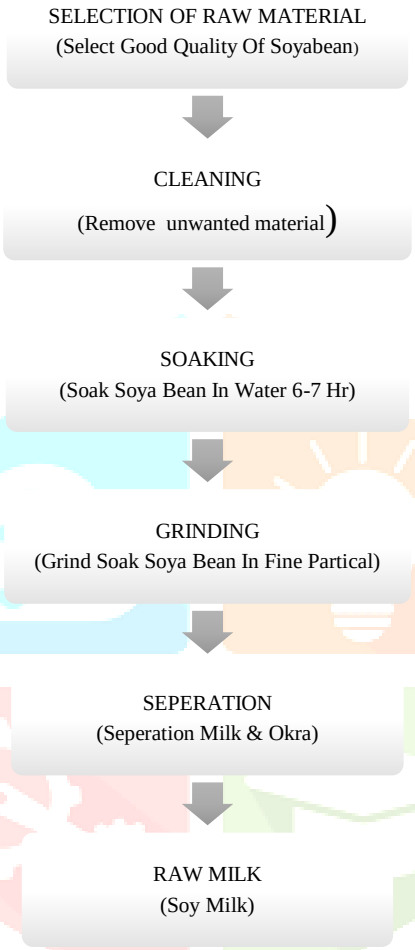
II Raw material and methodology

1. Soyabean
2. Cowmilk
3. Yoghurt culture (lactobacillus burglarious

1.1 Preparation of soymilk

Soy milk can be made from whole soybeans or full fat soy flour. The dry beans are soaked in water overnight or for a minimum of 3 hours or more depending on the temperature of the water. There hydrated beans then undergo wet grinding with enough added water to give the desired solids content to the final product. The ratio of water to beans on a weight basis should be about 10:1. The resulting slurry or purée is brought to a boil in order to improve its nutritional value by heat inactivating soybean trypsin inhibitor, improve its flavour and to sterilize the product. Heating at or near the boil point is continued for a period of time, 15-20 minutes, followed by the removal of an insoluble residue (soy pulp fiber or okhra) by filtration

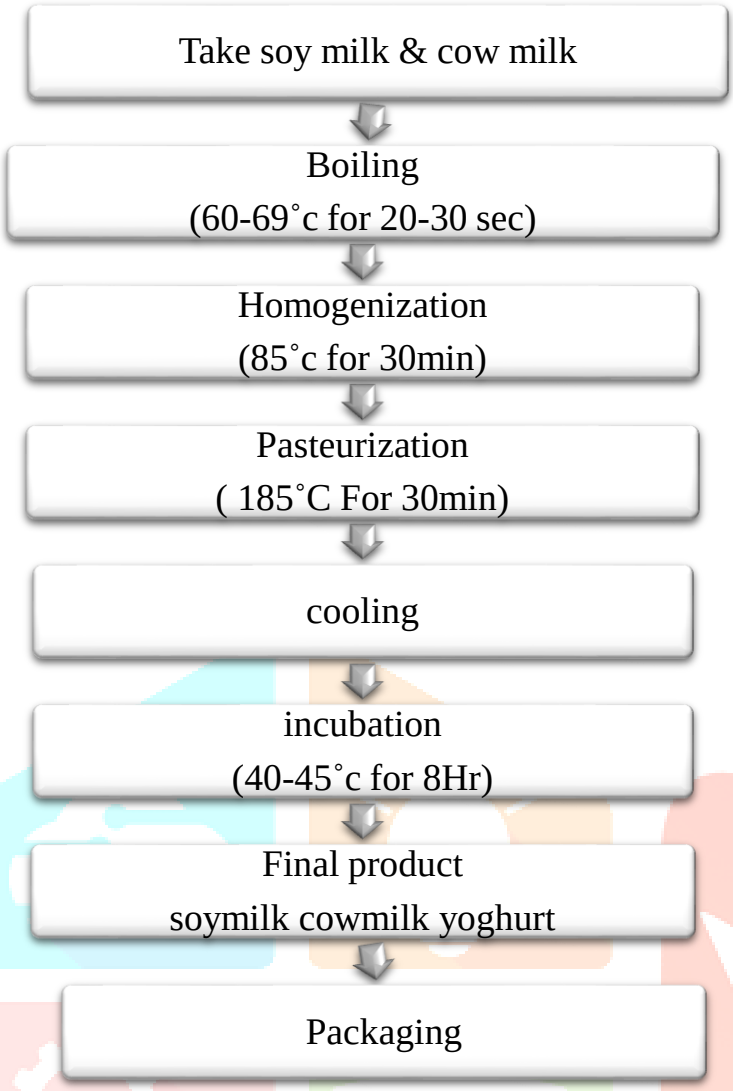
Preparation of soya milk flow chart



1.2 METHOD OF PREPARATION OF YOGHURT

Selection of raw material firstly soybean (Glycine max) perches from local market. variety of soyabean which is used in preparation of yoghurt is Phule Sangam 726. Soyabean soak in distilled water for 6 to 7 hr at normal temperature which is 26 to 30^0C. after ricing them, they were grand with water in grander. after that this is filter through double layer filter cloth and separate a okra and milk. Boling the milk at 80 to 100^0 C pasteurized and standardized milk and other hand I have taken standardized and homogenized low fat cow milk which is add 50% cow milk in soymilk which preposition of cow milk and soymilk 1:1 respectively and it put for cooling process. After that add culture which is lactobacillus burglarious and it put for 10 to 12 hr at room temperature for the complete fermentation process to yoghurt. resulting is nutritious yoghurt ready to consume These issues can, of course, be resolved by various processing techniques and fermentations.

Flow chart of mix yoghurt of soymilk with cow milk



1.3 Physical characteristics of yoghurt

This study examined the physical properties of stirred and set yoghurts prepared at 9% (w/w) total solids with different casein ratios and starter cultures (capsular or ropy) that produce exopolysaccharide (EPS) during storage. In addition to flow curve and area of hysteresis loop between the upward and downward curve of stirred yoghurt, the yoghurt was assessed for composition, firmness, and syneresis of set yoghurt. It was also assessed how many starter bacteria were still alive and how much lactic acid and EPS were present in the yoghurt. EPS concentration did not drop over the course of storage (28 days). The findings suggested that altering the CN-to-WP ratio and using starter cultures that produce EPS can improve the physical properties of set and stirred yoghurts (Tamaytkul et al. 2012). To reduce the danger of kwashiorkor and import the micronutrients required for young children's healthy growth and development, soymilk can be substituted for milk. The fight against malnutrition, such as stunting, especially in weaned children under five, and anaemia in women of childbearing age, will be energised as a result. Additionally, using soymilk instead of milk could lower the selling price of yoghurt and broaden the market for buyers, including low-income and impoverished households. Iron levels in soymilk, which are already high, will help prevent anaemia brought on by a shortage of iron. (2022; Elie Foku et al)

Nutritional properties	Trial 1st	Trial 2nd	Trial 3rd
Soy milk: cow milk	1:1	2:1	1:2
Moisture	90 %	92 %	90 %
Ash	0.70 %	0.5 %	0.9 %
Fat	1.6 %	0.43 %	0.39 %
Vit C	3.84g	3.83g	3.81g
Iron	0.437g	0.124g	0.632g
Protein	32 ± 2g	34 ± 2g	31 ± 2g
Magnesium	3.647g	4.2925g	5.0195g

Table 1 Nutritional property of mix yoghurt

Formulation of preparation of mix yoghurt per 100gm

1.4 Texture analysis of yoghurt

Viscosity of yoghurt is 52.8%.it is measured by (DV-1) viscometer instrument using 634.5 mPa.s with SPL 3 at 28.8^{0}C

Table 2 mineral content in mix yoghurt

Mineral content	Mix yoghurt
Calcium	190g
Iron	0.437g
Magnesium	4.2925g
Vitamin C	3.83g

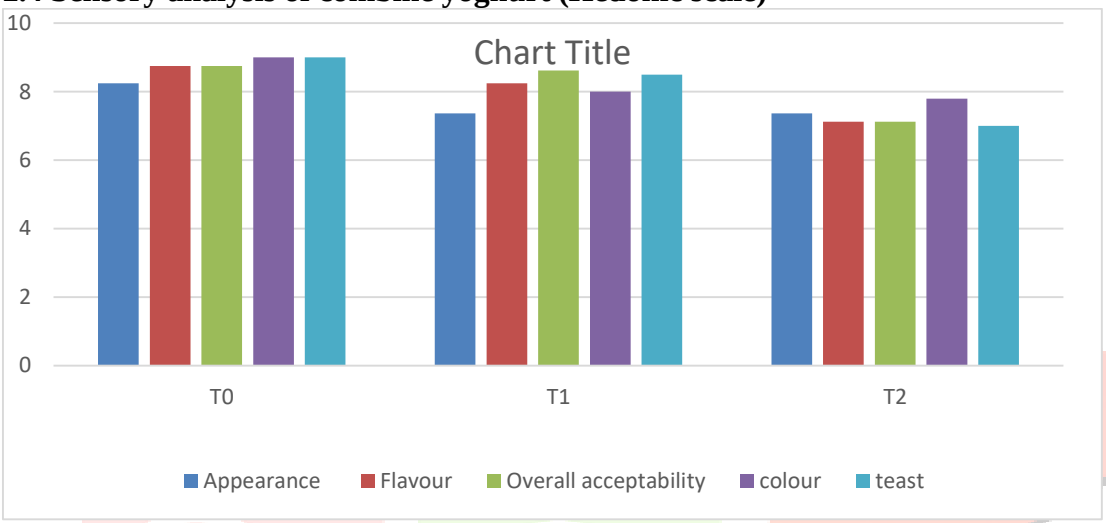
2.3 MICROBIAL ANALYSIS OF YOGHURT

I have done microbial analysis in yogurt production. yoghurt is fermented product .in this process analysed of microbes e-coli, lactobacillus bulgaricus, yeast and mould, standard plate count (SPC), salmonella using the method. For the microbial analysis firstly collect the media for all microbial contain in our product and aad water according to standard method and put in autoclave for 20 min at 121^{0}C and 15 PSI pressure. Petri plate saline texture also sterilised by autoclave after that three dilution are made for each sample. One gram sample used for three dilution and pour in petri plate and pour media mix turning of plate clockwise and anticlockwise direction for mix media and sample properly and rest the plate for proper solidification after this process plate put in incubate the plate at 35 to 37 ^{0}C for 72 hr. after 72 hr plate are observed under colony counter and observation under taken a result .in yoghurt yest and mould present at 70*10^3 cfu/ml. lactobacillus present in 300 *10 ^{3} cfu/ml. salmonella and e-coli are absent in yoghurt.

Table 3 of microbial analysis

Name of Micro-organism	Counting method	Result
SPC (Bacterial count)	10^3	Absent
Yeast & Mould count	70×10^3	Present
E-coli	10^3	Absent
Salmonella ssp.	10^3	Absent

2.4 Sensory analysis of combine yoghurt (Hedonic scale)



III RESULT AND DISCUSSION

3.1 RESULT

Combine soymilk with cow milk is more beneficial than normal yoghurt because it is rich in protein compare to normal yoghurt. because soybean is rich source of protein.in this yoghurt decreases level of fat. Also, low level of sugar yoghurt.it is more nutritious value. It is beneficial for particular diabetic patient.

In this study show soy milk in combination with cow's milk could be a suitable substrate for the culture of *Lactobacillus acidophilus*, *Lactobacillus casei* and yogurt starter. Such functional food could be a desirable choice of food for consumers, particularly those who are lactose intolerant. However, the organoleptic acceptability of such products should be evaluated and further research is required, to screen starters that showed great potential for application in the development of soymilk-based products.

3.2 Discussion

In our work, the addition of these lactobacillus bulgaricus into soy milk for fermentation with yogurt starter cultures impacted the final nutritional value of the products and the resulting protein bioaccessibility. Regarding the centesimal composition, carbohydrates decreased in all the fermented samples containing the probiotics. Several authors reported a reduction in carbohydrates during fermentation of soy milk (Ahsan et al., 2020, Obadina et al., 2013, Osundahunsi et al., 2007). Sugars are fermented by microorganisms for cellular activities and growth. On the other hand, protein content was higher in soy beverages inoculated with BC9 (alone or in mix), suggesting that the strain of *L. gasseri* positively affected the amount of total proteins. Although fermentation is usually associated with protein hydrolysis, Obadina et al. (2013) described an increase in protein content during natural fermentation of yoghurt, a fermented soy beverage. The increase may depend on several factors. From one hand, microbial cell proliferation can increase the final bacterial biomass resulting in a higher protein content. On this regard, D'Alessandro et al. (2023) reported that the addition of *L. gasseri* BC9 determined a decrease in *L. delbrueckii* subsp. *bulgaricus* but also a significant increase in the other starter, *S. thermophilus*. On the other hand, protein content may be affected

by fermentation processes because it favors aggregation of protein and carbohydrates structure (Bonczar et al., 2016).

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