



Exploring the Hidden Aspect of *Dadhimastu* (Curd whey) with Special Reference to Pharmaceutical and Analytical Sciences

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ABSTRACT

Dadhi (curd), a valuable milk product of India, has great nutritional and therapeutic importance in *Ayurveda*. Though it finds extensive application in *ahara* (food), *panchakarma* (detoxification therapies) and preparations of *rasoushadhi* (herbo-mineral formulations), there is restricted research on *Dadhimastu*. The objective of this research is to evaluate *Dadhimastu* made through two methods which is unfiltered and filtered using organoleptic, physicochemical, and inorganic elemental parameters. Results indicated the samples to be identical in organoleptic characteristics but were marginally different in pH (4.44 vs 4.30) and fat content (0.575% vs 0.457%). Filtration was seen to decrease fat content and marginally improve acidity, thereby possibly enhancing digestibility and acceptability for persons whose *agni* (digestive fire) is hampered. The 4-layer cloth filtration reduced fat content and minimally changed *Dadhimastu* pH, which impacted taste, shelf-life, and microbial growth. Nutritionally, processed *Dadhimastu* can be helpful for patients with impaired *agni*.

Keywords: *Dadhimastu*, Curd, Whey, Pharmaceuticals, *Ayurveda*.

INTRODUCTION

Dadhi is known to be one of the popular milk products in India. It is known to have the highest nutritive value and is considered to be a very good probiotic. Our ancient *acharyas* such as *Acharya bhavamishra* has dedicated a separate chapter called *Dadhivarga* (category of fermented dairy products) where all kinds of classification related

to *Dadhi* and its therapeutic applications has been described in detail.¹

One among the classification under *Dadhicomest dadhimastu*. The supernatant liquid part of the curd is known as *Dadhimastu*. This upper liquid portion is not only used as therapeutic or dietary purposes but is used in *panchakarma* therapies and in *rasaushadhi* preparations such as



in preparation of *Tutthabhas mikarana* (making of calcinated copper sulphate). Various *Acharyas* have mentioned the significance of *Dadhimastu*. *Acharya sushruta* and *Bhavamishra* mentions the properties of *mastu* to be *Laghu* (light) in nature. It is said to be *Vatashamaka* (which pacifies *Vatadosha*) and helps to mitigate *agni*. *Acharya* explains intake of *Dadhimastu* relieves *Ghani* (exhaustion), provides *Balya* (strength), kindles the *agni* and stimulates the desire for food and provides satisfaction to the patient. It is said to cause breaking or loosening of feces very quickly.^{2,3} The author of *Raj nighantu* also mentions about *mastu* under the chapter of *Kshiradivarga* (milk and milk products group) where it is said that the *Mastu* which is administered cures *Trushna* (morbid thirst), *Gulma* (phantom tumor), *Pliha* (splenomegaly) and *Arsharoga* (hemorrhoids).⁴

Though a lot of research work has published on *Dadhi*, research studies specifically focusing on *Dadhimastu* in *Ayurveda* has been limited. In this article, an attempt has been made to prepare *Dadhimastu* in two different methods. Analytical methods that include organoleptic

characters, pH, fat content and inorganic element analysis was conducted.

MATERIALS AND METHODS

Study includes preparation of *Dadhimastu* using two different methods. Firstly, preparation of *Dadhi* was done on 23/10/24. Curd and milk were procured from a local market.

Method of preparation

To prepare *Dadhimastu*, 200 mL of milk was boiled in a clean stainless-steel container and allowed to attain lukewarm state. It was divided into two samples. Then 5 g of curd was added to each of them. This was mixed homogeneously and was stored in an aluminum foil overnight. On the following day, the supernatant liquid portion was carefully filtered from the first sample in a gradual manner to a clean sterile container and was labelled as sample 1. Similarly, the second sample underwent filtration using a four layered clean cotton cloth. The resulting watery liquid was labelled as sample 2 and was stored in a clean sterile cloth to prevent contamination.

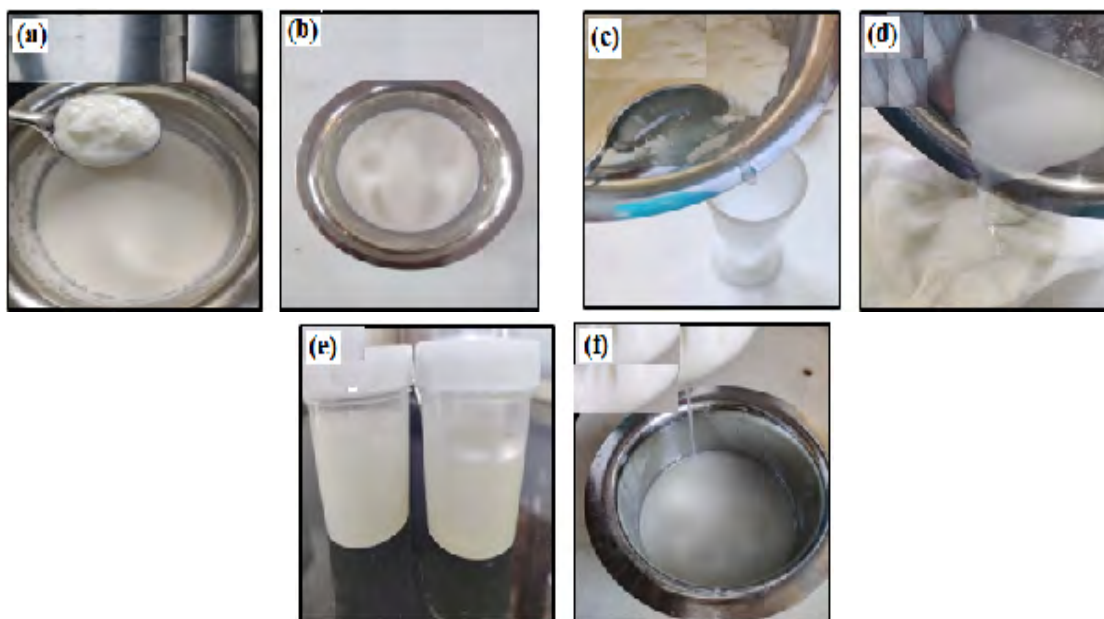


Fig. 1. Showing the preparation of *Dadhimastu* by two different methods. (a) 200 mL of milk taken. (b) 5 g of curd added to the milk. (c). Liquid portion of curd was collected and labelled as sample 1. (d). Liquid portion of curd underwent filtration. (e). Strained using a fourlayered clean cotton and labelled as sample 2. (f). Both the samples are stored in air tight containers

Observations and Results

Analytical study of both the samples were conducted in Drug Testing Laboratory for ASU drugs approved by GOK, KAHER's Shri B. M. Kankanawadi

Ayurveda Mahavidyalaya, Belagavi, Karnataka on 23/10/24. Analytical parameters and organoleptic characters were analyzed. The reports were received on 25/10/24.

Table 1: Organoleptic characters of both the samples of *Dadhimastu*

| Sr. No | Organoleptic characters | Sample 1 | Sample 2 |
|--------|-------------------------|----------------------|----------------|
| 1 | Form | Liquid | Liquid |
| 2 | Color | Pale yellowish white | Pale off white |
| 3 | Taste | Sour | Sour |
| 4 | Odor | Sour | Sour |

Table 2: Physico chemical standards of both the samples of *Dadhimastu*

| Sr. No | Physico chemical standards | Sample 1 | Sample 2 |
|--------|----------------------------|----------|----------|
| 1 | pH | 4.44 | 4.30 |
| 2 | Fat content | 0.575% | 0.457% |

Table 3: Inorganic element analysis of both the samples of *Dadhimastu*

| Sr. No | Inorganic element analysis | Sample 1 | Sample 2 |
|--------|----------------------------|----------|----------|
| 1 | Sodium | Positive | Positive |
| 2 | Potassium | Negative | Negative |
| 3 | Phosphate | Positive | Positive |

DISCUSSION

Though preparation of *Dadhimastu* is easy and can be made in a short period of time, preparing this in large quantity is much difficult as the yield without filtration is relatively very less as compared to filtered one. Hence an attempt was made to conduct analytical study to see for any noticeable changes in both samples.

The physico chemical standards and inorganic element of both the samples seem to be similar. pH of sample 1 is 4.44 whereas in sample 2 is 4.30. The slight decrease in pH of filtered *Dadhimastu* infers that the bigger globules of fats must have been trapped into the cloth while filtration. Some amount of impurities, low molecular weight compounds like nitrogen and particles such as smaller fat globules must have passed through the pores of cloth. Some of the proteins, polysaccharides and bacterial cells could also be partially removed during the phase of filtration. Organic acids such as lactic acid could have been remained in the filtrate which led to increase in free hydrogen ion concentration and making it more slightly acidic affecting its pH.⁵

Fat content of sample 1 is said to be 0.575% and that of sample 2 is 0.457%. Tsermoula *et al.* stated that whey liquid contains nearly 0.05% fats.

It is composed of 66% non-polar lipids that contains triacylglycerols, diacylglycerols and 33% polar lipids which contains phospholipids, phosphatidylcholine, phosphatidylethanolamine, sphingomyelins, phosphatidylinositol and phosphatidylserine.⁶ Here the fat content in both the sample is present but the slight reduction of fat content in sample 2 might have caused the smaller fat globules, phospholipids and lipoproteins that have small molecular weight might have moved out. This will be beneficial in *sthoulya* (obesity) patients as it will be labelled under low fat diet. The phospholipids, which are the basic building blocks of milk fat globules, may have a positive effect on neurodevelopment and the body's resistance to infections. Another health benefit is that the filtered *Dadhimastu* aids in easy digestion process as compared to the unfiltered one. This is because the fat globules are *Guru* (heavier) to digest. In case of individuals who already have *Mandagni* (weak digestion), this excess fat accumulation if given as anupana without filtration can cause *Srotorodha* (obstruction of bodily channels) and will impair *Rasa rakta* (plasma to blood) formation. The smaller fat globules present in *Dadhimastu* are *Laghu* in nature. This helps in preventing *Kapha* dominance and *Srotorodha* thereby leading to easy digestion which ensures maximum and effective absorption without hampering the *Agni*.

According to sources, curd contains 104 mg of potassium. *Dadhimastu* is completely devoid of potassium. Presence of sodium promotes regulation of water levels in the body. It helps to regulate blood pressure as sodium is present in moderate amount as compared to *Dadhi*. Phosphate helps to generate energy on cellular level. It supports pH homeostasis in the body to prevent metabolic disorders.⁷

From a pharmaceutical point of view, for preparing *Lakshadi kera thailam* and *Phalataila* in large scale, the filtered *Dadhimastu* would be highly appreciated. In large scale, the yield is more as compared to the unfiltered one.^{8,9} Based on the ancient treatise *Rasa Tarangini*, *Dadhimastu* is employed as a *Bhavanadravya* (a liquid media used for levigation) in the process of *Shodhana* (purification) of *Tutthabhasma* (calcinated copper sulphate) for three days. While utilizing, filtered *Dadhimastu* during the process may increase the quality of *Bhasma* (calcinated ash) so that it can be used effectively for treatment purposes.¹⁰

Considering consumption aspect, *Dadhimastu* is given as *Anupana* along with *Mrityunjayarasa* in case of *Vatajajwara*. In such case, filtered *Dadhimastu* can be the best option to adopt.¹¹

CONCLUSION

A 4-layer cloth filtration system was indeed the likely cause of the fat content reduction and at the same time, it quite altered the acidity of the *Dadhimastu*. This minor change in pH might mean that the process of filtering would bring the biochemical adjustments which may lead to the alteration of taste, shelf-life, and microbial activity. From a nutritional perspective, processed

Dadhimastu could be the more appropriate solution to those who's agni is hampered.

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Conflict of interest

The authors declared no conflict of interest in this study.

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