

Analysis of Milk : Technical Study In Rohilkhand Region

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Abstract- Milk is considered a total meal because it provides all the nutrients that a human being requires. Adulteration in dairy is a widespread issue in today's society, regrettably. It presents a risk to the public health of the public at large. As a result, it is of vital importance to examine the milk in respect of the physicochemical properties it has, in addition to assessing its quality as well as determining who has not been contaminated. This study is being performed in order to evaluate the physicochemical qualities of samples of milk collected from a variety of suppliers, including but not limited to branded stores, dairy farms, street sellers, etc. Milk is analyzed in terms of its physicochemical properties in a variety of ways. It was found that the majority of the samples contained water that has been added to them. According to the Milk Analyzer, the adulteration was produced by water. It has been discovered that milk samples taken from dairy farms have a high level of components, including fat (6.25) as well as protein (187), as well as specific gravity (1.030), and SNF (10.3). While the dairy that is sold by street vendors as well as sold in branded stores (such as Amul as well as Mother Dairy) has a lower benefit in terms of fat, and SNM, but instead protein when contrasted to milk that is made on dairy farms. It's because some street vendors "or" branded milk are diluting their dairy with water as well as selling it as milk. Street vendors do not give thought to the quality of water they are putting on the products. This leads to a number of risks to health. It is carried out by the government of India's food safety department with the goal of measuring and managing the quality of milk that is available for resale commercially.

Keywords : - Physico-Chemical, Milk branded, Milk, Ultrasonic Milk

Analyzer- Introduction- All nutrients can be found in dairy products, giving it a crucial component of a healthy diet. Dairy is a human being's initial and also most fundamental food source during the first year of life. For all animals, including human, it is the main and initial source of development nutrients. Furthermore, the anti-infective antibodies present in this compound further provide defense against bacterial infection. Because of its beneficial impacts on public health as well as the number Of jobs it creates in rural areas, milk helps to keep customers from going the countryside again for city. Nevertheless, milk adulteration became a widespread

problem in modern culture. It endangers population livelihoods but instead finances and poses a threat for their safety. Water, 3.7% fat, 3.9% protein, 4.89% lactose, as well as 0.69% mineral oxides form the bulk of the average buffalo dairy milk's composition. A most prevalent method of milk adulteration is the introduction of water that is itself adulterated (i.e., contains chemicals, bacteria, detergents, or even other poisonous substance). If milk is diluted with water, the SNF level (most of which consists of proteins) is reduced, which can have a detrimental effect on a baby's upbringing. Trimming fat is another form of impurities. Fat is necessary for healthy growth of the body. The purpose of this paper is to present the results of an analytical survey done on milk samples purchased from different sources in the Rohilkhand area. The results of this poll will help identify instances of milk adulteration as well as confirm the product's quality.

Material & Method- Milk samples are gathered from dairies, supermarkets, and even street sellers in the Rohilkhand area. Capped jars at a temperature of 4° C 8° are used to store these samples.

Examination-- A lactometer is used to analyze these samples in order to verify various physical parameters, such as specific gravity. The ultrasonic milk analyzer was used to determine the chemical properties. In order to reduce the amount of air bubbles inside the milk samples, 25 milliliters of each sample should be agitated between 4 and 5 times.

Result & Discussion- Several different dairy samples have been taken from dairy farms, branded stores, as well as street vendors inside the Rohilkhand area. It was discovered that primary method of adulteration in those samples was either the addition of water or the removal of fat or cream. Twenty samples of every kind of milk are subject to a random check, which is performed on all of the samples. The information in regards to them may be found in table that follows.

Table 1: Specific gravity and other chemicals constituents of raw buffalo milk samples collected from different sources.

Sr. No	Test	Dairy Farms	Branded shops	Street Venders
1	No. of Samples	20	20	20
2	Specific Gravity	1.031	1.030	1.028
3	Fat &	6.25	5.60	4.92
4	SNF&	10.3	9.2	8.4
5	Protein &	18.7	18.2	13.8

From above 20 samples of each type of milk, it is clear that in Rohilkhand region dairy farms are much better in quality than other branded shops or street vendors. In the components here we calculate specific gravity, SNF, fat, protein. Each parameter of dairy farm is much higher in than other branded shops. We observed that street vendors, there is much adulteration of milk by mainly water because of it the specific gravity is 1.028 lower than dairy farm milk, fat 4.92% while in dairy farm its value is 6.25% and SNF 8.4% while from dairy farms milk its value is 10.3% and major difference in protein 13.8% while in dairy farm milk it is 18.7%.

Analysis of Raw Milk- Milk is not only one of the most widely used items as well as the raw ingredient that enters into the production of all dairy goods. As a result of this, the dairy sector now must place a significant emphasis on the monitoring of milk components. Each kind of milk product calls for milk that differs in the proportions of its components. In furthermore, milk contents ought to be monitored on a consistent basis in order to sustain a track history of the product's quality. Milk research has a strong influence on not only the dairy industry but also on the farming industry that provides milk. The state of the elephant's health as well as the kind and quantity of food it consumes directly affect the composition of the milk that the animal produces. Consequently, these measurements may give valuable insights for enhancing the quality & selection of their feed, as well as valuable insights for early identification and treatment of ill animals. In particular, these measures can provide valuable insights for preventing infection. Chemical breakdown methods are now the most precise ways for analysing milk; however, these methods are time-consuming, destructive, and it can only be carried out in a laboratory environment. Users often get a conclusion for all dairy batches by average the results of samples taken from a variety of different batch of milk. Using these technologies to monitor the animals' performance and the health of the food they are now being fed is both incredibly costly and very wasteful. Both the dairy and milk farming industries would surely benefit from the development of a simple instrument that might quickly test the components of milk. This instrument should be portable, reasonably priced, and ought to enable users to analyse their target samples in a non-destructive manner when out in the field, and in the case of dairy farming applications, it need to be able to do just that inline at the milking station if possible.

Conclusion - All of the samples that were analysed, whether they were from dairy farms, branded businesses, or even people selling their wares on the street, were found to be within a tolerable distance of the typical values seen in buffalo milk. Some of the physicochemical characteristics have their values changed as a result of the incorporation of preservatives into the process of manufacturing the branded product. On the other hand, the samples that are sold by street sellers exhibit large value disparities, which may be due to the prevalent practise of adding water to the milk or skimming the cream from the top of the milk. As a direct consequence of this, the value of specific gravity SNF, in addition to the value of fat, is

lower than what is generally thought to be normal for milk that is derived from dairy farms. People who live in the Rohilkhand region will have a greater awareness of the issue as a result of the study, and policymakers in the Indian government will be able to use it as a resource when formulating a strategy to combat the adulteration of milk because of the information provided by the study.

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