

## Recent Trend in the Dairy Industry

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### Introduction

Cow milk has been the major source of milk and dairy products in developed countries especially in the Western world, even though more people drink the milk of goats than that of any other single species worldwide [1-3]. In addition, significant amounts of other species milk such as buffalo, sheep, mare, yak and camel are consumed around the world [4].

During the last several decades, major advances have been made in the science, technology and commercial applications of the multitude of nutrients and bioactive components for human nutrition, health and medicine, mostly using bovine milk and colostrum in the scientifically advanced and industrialized countries.

Milk has been known as nature's most complete food. The proof is that a newborn baby does not need any other foods except mother's milk. However, the traditional and contemporary view of the role of milk has been remarkably expanded beyond the horizon of nutritional subsistence of infants. Milk is more than a source of nutrients to any neonate of mammalian species, as well as for growth of children and nourishment of adult humans [4].

Milk and dairy products are the most important foods that can sustain the nutrition and health of people at least in the Western world. This is why the dairy industry has been continuously evolving and developing its direction in order to meet the recent trends of consumer demands and flavors. There are at least six recent trends that consistently have shown for dairy manufacturers and in the dairy industry to meet the demands of consumers as follows:

### Reduction in added sugars

For health-conscious people, sugar has been a big no-no in foods including dairy products. Studies have shown that the added sugar intake during adolescence (i.e. soft drink) has been associated with weight gain and cardio metabolic risk factors [5]. In addition, dietary habits may persist into adulthood, increasing chronic disease risk in later life such as diabetics, hypertension and coronary heart diseases [5]. Dairy manufacturers and the dairy industry have taken this recent trend rather seriously and produced or created products containing no or very low added sugar content. They are also looking for nutraceutical alternative sweeteners which can replace sugar, with least impact on the product quality or the organoleptic property of the dairy products.

### Plant-based product

In recent years, health issues including cow milk allergy, lactose intolerance, calorie concern and prevalence of hypercholesterolemia, more preference to vegetarian diets have influenced some dairy consumers towards choosing cow milk alternatives [4,6]. Across the

globe, plant-based or non-dairy milk alternative such as soy milk is the fast growing segment in newer food product development category of specialty beverage. This recent trend of consumer inclination towards a healthy lifestyle has turned tables for the dairy industry. Plant-based milk alternatives are a rising trend, which can serve as an inexpensive alternate to poor economic group of developing countries as well as regions where cow's milk supply is insufficient [6]. Majority of these milk alternative products are lacking nutritional balance compared to bovine milk, while they contain functionally active health promoting components which attracts health conscious consumers. However, these plant-based milk alternatives have some limited popularity due to their possible sensory acceptability. The correct understandings on the new trend of consumers' attitudes and values will aid dairy manufacturers to develop the new dairy products for attracting the target consumers.

### Rising demands on new flavors

Reports have shown that modern consumers especially among the younger population are highly open to flavor experiments on new flavored dairy products. It is a great way to garner potential customers who are looking for something new and innovative products. However, there are several factors that impeded the growth of this flavor market. Flavored milk stands in a great competition to carbonated beverages, and also the rising vegan population is the obstacles for the growth of new flavor market [7]. Flavored milk is produced using milk, sweeteners, added flavors, colorings and preservatives, in order to enhance the taste. It is recognized as the second most acceptable dairy product worldwide and contains vital nutrients like calcium, protein, and vitamins, etc. [7]. Furthermore, it comes in different variants and disparate milk types, such as fat-free, and low-fat milk. In geographical view, Asia-Pacific represents the leading market for flavored milk, accounting for the majority of the market share [7]. Within Asia-Pacific, China represents the largest consumer. Asia-Pacific is followed by Africa, Eastern Europe, Latin America, North America and Western Europe [7].

### Clean label products

Modern consumers in industrialized countries are much more interested in information for the production methods and components of the food products that they consume than they had been 50 years ago [8]. Nowadays, clean labels have become the 'new supreme' for dairy products. Some production methods are perceived as less "natural", while some food components are seen as "unhealthy" and "unfamiliar" (i.e. artificial additives) [8]. Clean label products are known as they do not contain any additives, artificial preservatives, or chemicals. This new trend is often referred to as demanding the "clean label". This phenomenon has driven the dairy and food industry to communicate whether a certain ingredient or additive is not present or

if the food has been processed using a more "natural" production method [8]. This trend has become so popular in the dairy industry that it has now turned from a 'fad' to a 'necessity'. It will help dairy manufacturers to increase consumer trust and mitigate brand risk, and produce cleaner products to meet the new wave of trend.

### Environment-friendly nutrition

Today's dairy companies also focus on one of the major trends for providing consumers with the sustainable nutrition, through the production of healthy foods in environmentally friendly manners. This novel purpose can be achieved by well guided principle of a better understanding on this complex system between agricultural production, food processing, human nutrition, health, and environmental impacts. In a comparative study with average diets, nationally recommended diets (NRDs) in high-income nations were associated with reductions in greenhouse gases (GHG), eutrophication, and land use from 13.0% to 24.8%, 9.8% to 21.3%, and 5.7% to 17.6%, respectively [9]. They found that the increased environmental impacts of NRDs in low- and middle-income nations were associated with increased intake in animal products. It was also found that following a NRD in high-income nations resulted in a reduction in GHG, eutrophication, and land use. For upper-middle-income nations, a smaller reduction in impacts, and in lower-middle-income nations, there was a substantial increase in GHG, eutrophication, and land use [9]. These study outcomes suggest that dairy products definitely have to be produced and supplied the environmentally friendly nutrition by following well guided principles in production of milk and dairy products through such environment-friendly methods.

### Transparency and advanced technology

Demands for greater transparency lead to an increasingly prevalent feature of many areas of organizational activity [10]. The recent trend has shown that there has been a rapid growing need for transparency among dairy consumers. Customers would demand for transparencies, such as the sourcing policies, product nutritional information and human rights policies in production of milk and dairy products. In addition, dairy manufacturing companies also have employed a variety

of advanced technologies at unprecedented levels to enhance better decision-making in production of their products by using recent technologies, such as data analytics, sensors, and digital technology. Using the rubric of transparency, demands can be made to organizations to demonstrate recognition of their responsibilities including environmental impact, how money is spent, the returns received on money invested, and so on [10].

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