

# Yogurt maker with concentration system for special uses

Mehdi Farzpourmachiani<sup>1</sup>, Ali Farzpourmachiani<sup>2</sup>

## 1. Mehdi Farzpourmachiani<sup>1</sup>

Ph.D. Entrepreneurship candidate, Brussels Capital University, Istanbul, Turkey  
(IFIA Inv. Member, Verification Number: IR2020MAR008MCXF)

## 2. Ali Farzpourmachiani<sup>2</sup>

Ph.D. Entrepreneurship candidate, Brussels Capital University, Istanbul, Turkey  
(IFIA Inv. Member, Verification Number: IR2020MAR010ACXM)

### *Abstract*

*Yogurt is a dairy product, which is made by mixing fermented milk with various ingredients that give it flavor and color. Yogurt has several types and one of the most popular is concentrated yogurt. Concentrated yogurt is yogurt that has been filtered to remove most of the whey, resulting in a denser consistency than regular unfiltered yogurt, while retaining the characteristic sour taste of yogurt. In this study, we will present a new device for a concentrating system that is simply capable of making Concentrated yogurt at home. This yogurt maker with US patent application number 63160749 can help to users to make Concentrated yogurt in a short time with very low cost in home kitchen by some milk*

*Keywords: Strained Yogurt, Concentration System, Patent.*

### **Introduction**

Yogurt is a popular dessert on the family table and is considered one of the oldest fermented foods, originating in the Middle East and Asia [1]. There are different types of yogurt in the world such as traditional unstrained yogurt, Greek yogurt, goat yogurt, sheep milk yogurt, Skyr (or Icelandic yogurt), Australian yogurt, etc. [2-3].

One of the most important types of yogurt is concentrated yogurt (C.Y) or strained yogurt that has been filtered through a tissue or paper bag or filter to remove whey, giving a consistency between that of yogurt and that of cheese, while preserving the characteristic acidity of yogurt [4]. C.Y is known by different names in various countries such as Süzme yoğurt in Turkish, Labneh in the Middle East, and strained yogurt or Greek yogurt in Europe, and is very beneficial for the health of a person. [5]. Given C.Y's impressive nutritional profile, it has been linked to several health benefits [6-7].

**1. Good source of protein and other nutrients.** One of the main benefits of C.Y is that it is rich in protein, a macronutrient needed for virtually all chemical reactions in the body, healthy immune function, tissue repair, and more.

**2. May Be Beneficial Bone Health.** C.Y contains a number of nutrients necessary for the maintenance of a healthy skeletal system, including protein, calcium, magnesium, and phosphorus. Not only are the nutrients in C.Y necessary for maintaining bone health, consuming C.Y can also help increase bone formation.

**3. May Support Gut Health.** Research suggests that regular consumption of yogurt may help support a healthy digestive system by increasing bacterial diversity in some people's gut.

**4. It can promote muscle recovery and healthy body composition.** Getting enough protein is essential for supporting overall health and muscle recovery. C.Y is a great post-workout snack option for athletes. Its high protein content can promote muscle protein synthesis and recovery.

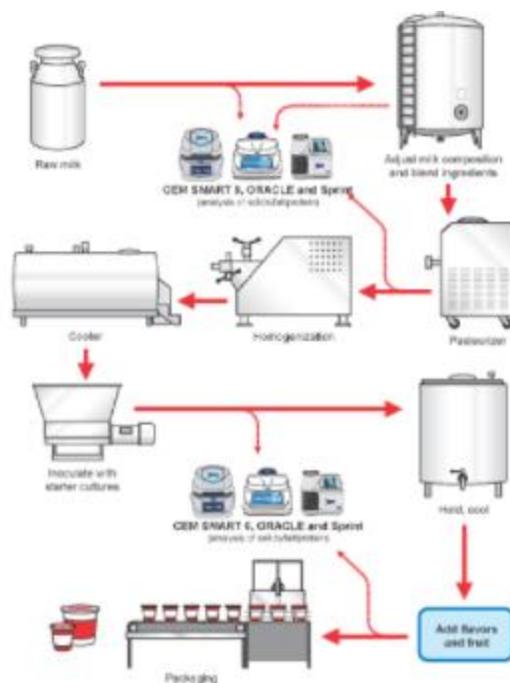
**5. It can help you stay full and maintain a healthy body weight.** Protein is the most satiating macronutrient, and adding protein sources, such as dairy, to meals and snacks is a smart way to help you feel full between meals. Since yogurt is a nutritious, high-protein food, choosing yogurt and other high-protein foods over less nutritious foods can help maintain a healthy body weight.

**6. Encourage good mental health.** Research suggests that consuming probiotic yogurt benefits a person's mental health. A 2016 study found that workers who ate 100 grams of probiotic yogurt per day or took one probiotic capsule per day experienced less stress, depression and anxiety than those who did not [8]. This effect is likely due to the relationship between the gut and the brain and the gut's ability to produce neurotransmitters, such as serotonin and dopamine.

**7. Lower Blood Pressure.** C.Y is a form of probiotic fermented milk that can lower blood pressure. A 2013 Trusted Source meta-analysis of 14 studies, involving over 700 participants, found that milk fermented with probiotics helped lower blood pressure [9]. Another 2015 study from Trusted Source, involving 156 overweight participants, found that consuming probiotic yogurt did not affect blood pressure and other cardiovascular risks [10].

**8. Reduce the risk of type 2 diabetes.** Greek yogurt can reduce the risk of type 2 diabetes, a disease that affects the way the body processes blood sugar. Researchers have linked consuming more yogurt, but not other dairy products, to a reduced risk of type 2 diabetes, according to a 2014 study from Trusted Source [11].

The C.Y (Süzme yoğurt, Greek yoghurt, skyr, labneh) production process in factories is shown in fig 1, [12].



**Fig. 1. Yogurt processing**

Milk can lose some of its properties when heated. On the other hand, preservatives may be added during the manufacture of yogurt, which can be harmful to the body. Therefore, it is better to use a healthily reliable appliance for C.Y production in less time and at a lower cost. In this study, a type of household appliance for the production of C.Y will be introduced. The most important advantage of this device is that it is able to produce C.Y in a short time in a domestic kitchen with a little milk.

### Material and Method

In this research, a new yogurt maker instrument is introduced that can be placed in the home appliance basket and produce C.Y at a very low cost. The final schematic of the yogurt maker with a concentration system is given in fig 2.



**Fig. 2. Yogurt maker with a concentration system**

One of the most important benefits of this invention is that by using this invention it is possible to produce C.Y in a short time in the home kitchen with a little milk. As mentioned before, C.Y can be produced in various ways and it has two important parts, protein, and calcium. In addition, it includes a cream dry substance, which can be used in various forms such as food and for skin masks and creams. In fact, the C.Y made with this device is a rich source of vitamin B12, potassium, and calcium, and can help somebody for the sliminess.

This invention with US patent application number 63160749 was able to win Thailand Gold Medal (Thailand Inventors' Day 2020), WIIPA Special Award (Bangkok International Intellectual Property, Invention, Innovation and Technology, Exposition (IPITEX) 2020), International Innovation Awards Bronze Award (Malaysia Technology Expo (MTE), 2021), Special Award of ACHEIVMENT (Turkish Inventors and Innovators Network (MTE), 2021), IFIA Best Invention Medal (2<sup>nd</sup> Beirut International Innovation Show (BIIS), 2021), European Exhibition of Creativity and Innovation Silver Medal (EURO INVENT, 2021). Their certificate documents are in appendix.

## Conclusion

In the household appliance sector, factories today pay great attention to the production of yoghurt machines. But the C.Y maker has not yet entered the basket of family products. With the invention of the C.Y maker, a new device has been added for the production of household appliances, which can reduce household costs and, on the other hand, spend less time on the production of C.Y. In fact, anyone in their home can produce C.Y and use it with confidence in the health of the ingredients used. When a new product enters the market of the company as an invention, its production is monopolized and will bring a lot of added value to a brand. The yogurt maker is not exempt from it and has many benefits for the community and families.

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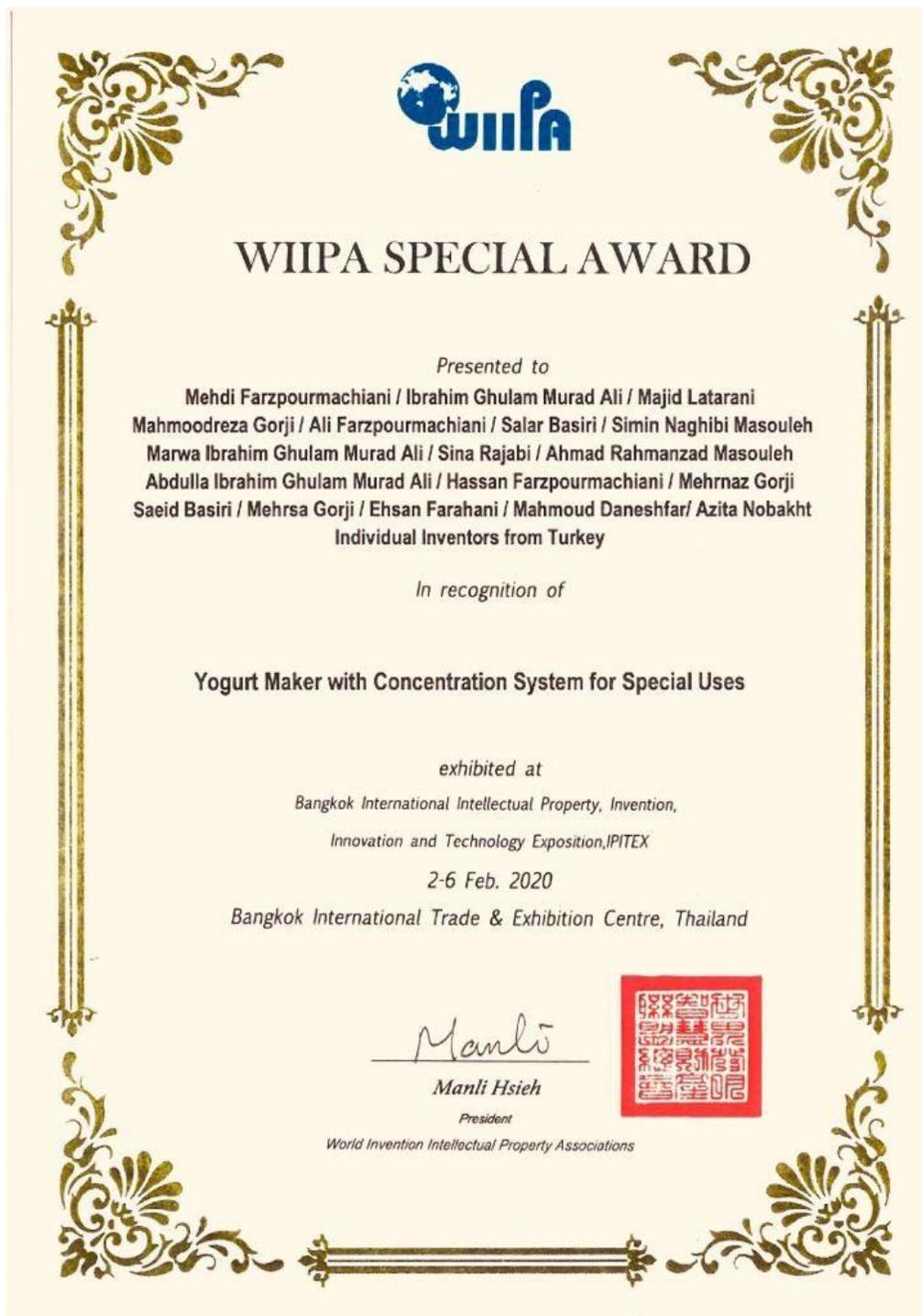
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Appendix

A. Thailand Inventors, Day 2020



B. WIIPA, IPITEX, 2020



C. Malaysia Technology Expo (MTE), 2021



D. Turkish Inventors and Innovators Network (MTE), 2021



E. 2<sup>nd</sup> Beirut International Innovation Show (BIIS), 2021



F. EURO INVENT, 2021

