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GHEE (CLARIFIED BUTTER) MAKING MACHINE

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ABSTRACT

ABSTRACTGhee (Sanskrit: Ghr̥ta), is a class of clarified butter that originated in India. It is commonly used in Middle Eastern cuisine, cuisine of the Indian subcontinent, Southeast Asian cuisine, traditional medicine, and religious rituals. The market size of ghee in India is 10,000 cores 11 or US\$1.5 Billion as of 2016. India is the world's largest producer of buffalo and cow milk and consequently also the largest producer and consumer of ghee. Ayurveda considers pure ghee to be sāt̥tvik or sattva-guṇi (in the "mode of goodness"), when used as food. It is the main ingredient in some of the Ayurvedic medicines, and is included under catuh mahā sneha (the four main oils: ghr̥ta, taila, vasā, and majjā) along with sesame oil, muscle fat, and bone marrow. Ghee industry is one of the biggest industry and we try to make a small scale ghee making machine so that people can have pure ghee and women in villages of Indian can make ghee and be self employed.

Keywords: Ghee, Market, machine

I. INTRODUCTION

Ghee(Clarified Butter) is a fat rich dairy product, widely used in India since time immemorial. It has been a part of our culture. It is mainly used as food ingredient and as flavouring agent. However, even today in organized sector, ghee is manufacture in steam jacketed kettles which inherently suffers from several disadvantages like low heat transfer coefficient, unsanitary operation etc. Mechanization of ghee making overcomes many of the problems associated with conventional method but it incorporates large surface area and large amount of manufacturing cost to build machine.

Considering the above stated problem, we decided to design a mechanism which produces same quality of product, utilizing least amount of capital so that it can usable for Domestic household purpose. It is an automatic machine which uses fresh Curd (Yogurt) as it's raw material, giving us the product as Ghee.It reduces the man effort by replacing domestic Ghee making process with new automatic process.One of the main advantage is that the waste from the process is nothing but Butter milk which can served as Beverage.

II. METHOD & MATERIAL

Curing of Butter

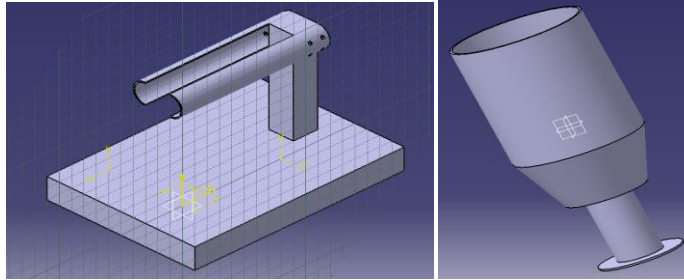
Curing of Butter is the most important process in making ghee. Boil milk up to optimum temperature using heating coil, after boiling milk add a teaspoon of curd and keep it undistributed for whole night \ for 8 hours. Now milk will be convert in crud, then add cold water into it and blend it for 10-15 min using curing device (madhani) and butter will be separated for the butter milk. Butter milk is refreshing drink and health comparing to the bottle cold drink which are carbonated water.

Boiling of butter

Butter obtain by from curing of curd is heated up to optimum temperature, which may lie somewhere between 90 degree to 120 degree should be gradually increased. The heating is done by heating coil which is connected to temperature control. Slowly the butter will be turning in to ghee (Clarified butter). Butter obtained from different type curd will produce different amount of ghee.

Materials

To give optimum weight to the machine ply is used to make the structure and base foundation to support structure. The dimension of ply is 29inch X 24 inch, it consists 8 small holes of 2mm and square piece is removed of dimension 7.5inch X 7 inch.

*Fig.1 (Structure)**Fig.2 (Curing Machine)*

A telescopic mechanism is mounted on the base. The mechanism is made by using ply, it consists of a hollow rectangle of dimension 12inch X 7inch and solid rectangle which will go up and down to maintain the height, L shape joint is given to the solid part of the mechanism which is made by PVC pipe, motor is connected to the PVC at the end to the pipe and other is fixed on the solid rectangle piece.

Heating coil is used for heating, heating coil is of 110 Watt. Temperature controller TC – 608 is used to control the temperatures which connected to a relay.

*Fig .3 (Heating System)*



Fig. 4 Working Model

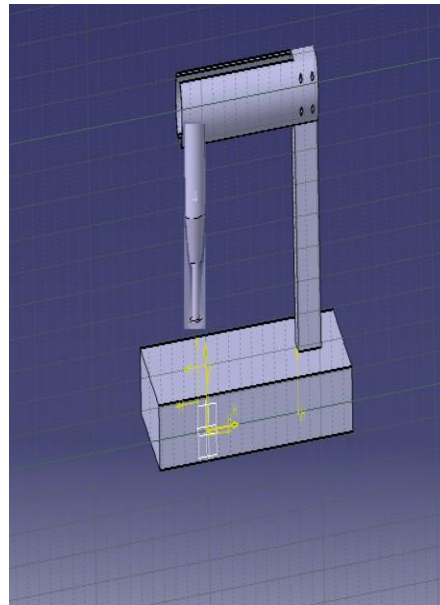


Fig. 5 Model

III. RESULT & DISCUSSION

The process of obtaining ghee or clarified butter is complicated and varies with milk. The milk of different animals have different quantity to fats and other vitamin and minerals.

Result Table:-

Name company or Milk Dairy	Curd Amount (gram)	Animal	Ghee (gram)
Maharashtra Dairy	1000	Buffalo	60
Katraj Dairy	700	Cow	10
Local provider	1000	Buffalo	65

IV. CONCLUSION

10 - 15 kg ghee making machine for women in rural areas. It is usually seen that ghee making machines are of larger quantities and rural women do not have the capability to buy large machines. So we would like to empower them by giving access to small machines to churn ghee and support the economic conditions of their families.

This machine is base on the old process of ghee making and each and every step is carried out in one machine, this reduces the effort and time consummation.

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