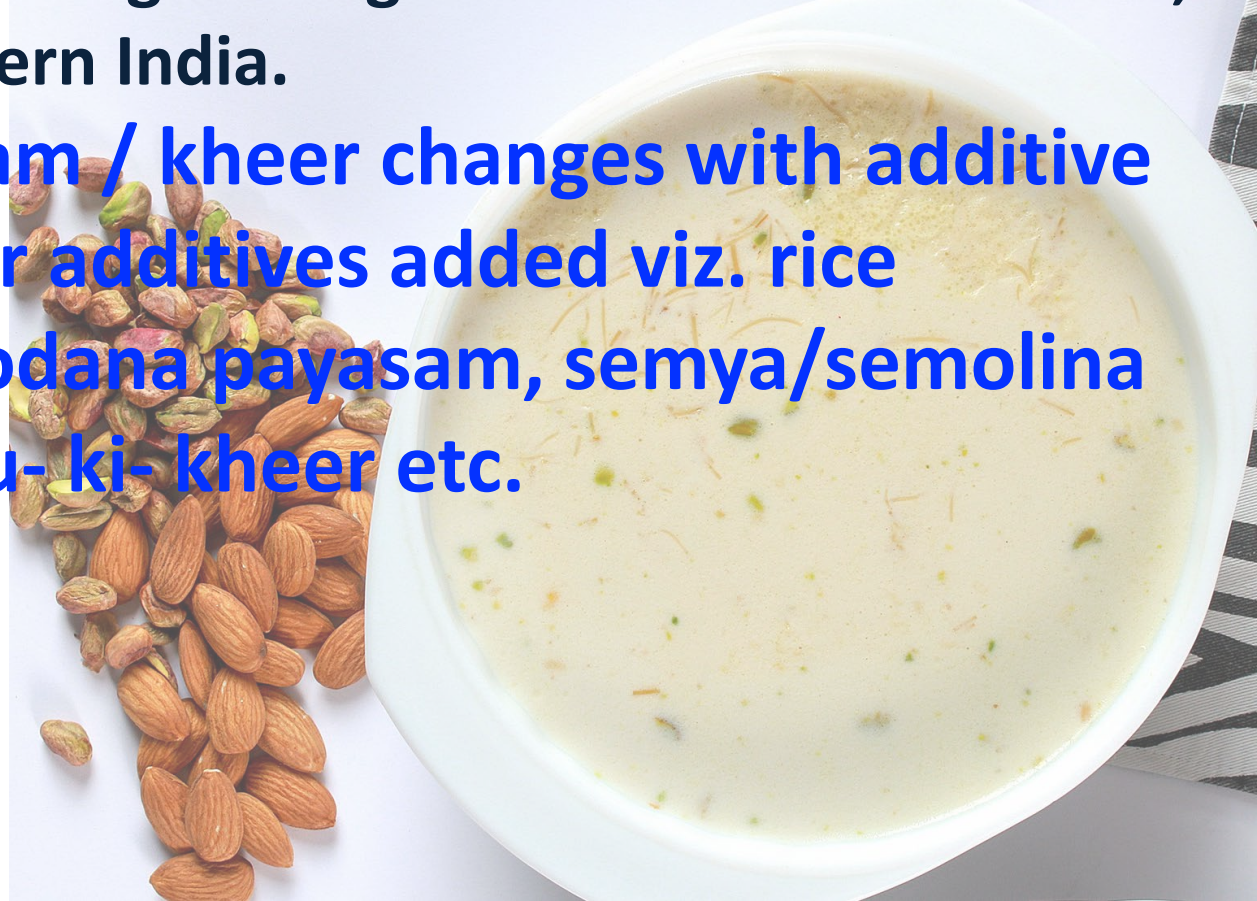




# **Kheer and Payasam**

***Product description, methods of  
manufacture, innovations in  
manufacturing and packaging  
processes***

- Cereal mixed indigenous milk products are popular all over India.
- Kheer is a heat concentrated milk based confection with added cereals, sugar, nuts and dry fruits.
- Variety depends on regions e.g. Kheer in Northern India, Payasam in Southern India.
- Name of payasam / kheer changes with additive cereal and other additives added viz. rice payasam, saboodana payasam, semya/semolina payasam, kaddu-ki-kheer etc.





**Rice kheer**



**Kaddu ki kheer**



**Coconut kheer**



**Semiya payasam**



**Bengal gram dal payasam**



**Sabudana payasam**



**Khus khus kheer**



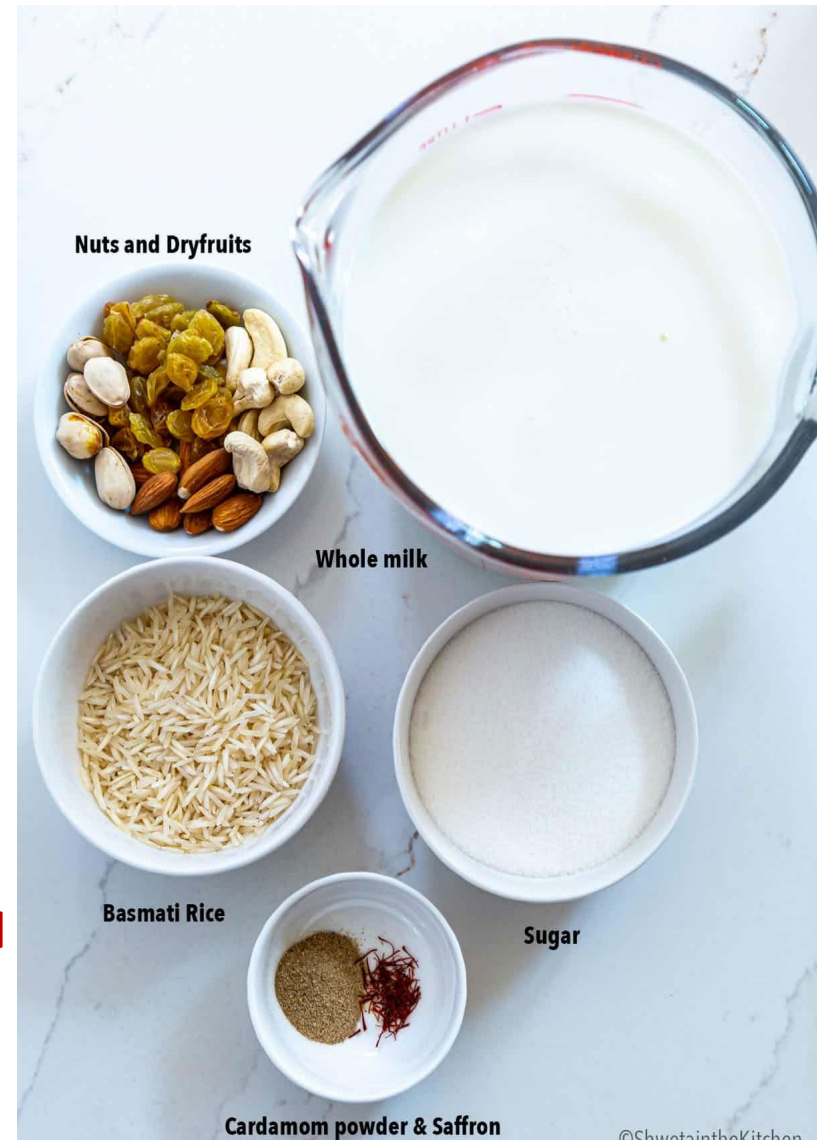
**Rava payasam**

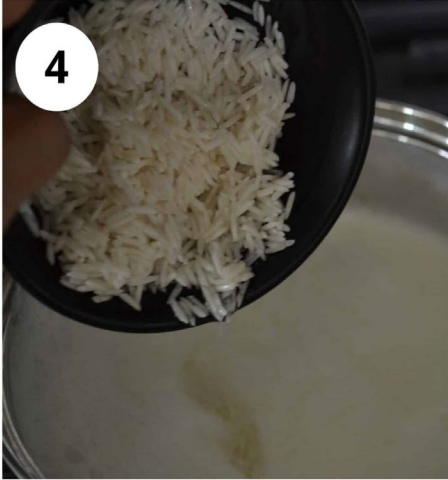


**Green gram dal payasam**

# Method of Preparation

1. Buffalo milk is preferred for both payasam and kheer preparation.
2. Standardized buffalo or cow milk with 4.5%-5.5% fat and 8.5 to 9% SNF is taken in a pan and boiled on a non smoky fire.
3. Good quality rice is taken, washed and added to milk @ 2.5%.
4. Gentle boiling accompanied by thorough stirring cum scraping of contents is undertaken.
5. When ratio of concentration of milk reaches 1: 1.8, sugar is added @ 5-7.5% of the milk taken.
6. Further heating with stirring is continued until rice is properly cooked and approx. when concentration reaches 2 to 3 times.
7. Powdered cardamom (@0.02%) is mixed as flavoring at end of heating.





**Chemical composition of kheer depends on kind of milk (cow/buffalo/mixed), quality of milk, ratio of concentration and quality and type of cereals/pulses/optional ingredients.**

## **Chemical Composition**

<b>Constituents</b>	<b>Percentage</b>
Moisture	67.02
Fat	7.83
Protein	6.34
Lactose	8.45
Sucrose	8.95
Ash	1.41

**Keeping quality of kheer:** Average shelf life of kheer at  $37\text{ C} \pm 1^\circ\text{C}$  is 2-3 days and 10-15 days at  $4\text{ C} \pm 1^\circ\text{C}$ .

**Extension of shelf life of kheer:**

- **Addition of nisin:** Addition of nisin at the end of preparation could extend the shelf life of kheer upto 8-10 days at  $37\text{ C} \pm 1^\circ\text{C}$  and 100-150 days at  $4 \pm 1^\circ\text{C}$ .
- **Sterilization:** Kheer packed in tin cans when heat treated by immersing in boiling water for 20 minutes, could keep well for 3- 4 days at room temperature and 60-70 days at  $4 \pm 1^\circ\text{C}$ . Shelf life of canned kheer manufactured, cooked and sterilised simultaneously was extended to six months at  $30^\circ\text{C}$ .

# DRIED KHEER MIX

- Production of kheer in a dry form suitable for ready reconstitution will extend shelf life of the product.
- Fresh buffalo milk is standardized to 6.9 % fat and and 9.5% SNF.
- Milk is preheated at 60 C for 15 min in the preheater of triple effect evaporator and then concentrated to 35% TS.
- Homogenisation of milk concentrate is done at pressure of 183 bar in first stage and 36 bar in second stage.
- Then it is mixed with ground rice and sugar and slurry is heated to temperature of 80 C for gelatinizing of rice in as steam jacketed vessel.
- Using a fluidized bed dryer the slurry is dried and instantized. The product is packed in metalized polyester LDPE bags.
- Reconstitution of kheer mix involves rehydration of instant rice in boiling water for 10 min followed by dispersal of powdered component into rice water mixture.
- Product is garnished with dry fruits, flavors etc.

