



E-ISSN: 2278-4136  
 P-ISSN: 2349-8234  
 JPP 2017; 6(5): 2278-2279  
 Received: 24-07-2017  
 Accepted: 25-08-2017

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## Development and Popularization of low cost food warmer in Kashmir valley

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### Abstract

Kashmir is a temperate climate place with severe winter months, under these conditions keeping the food items warm is always very challenging and it requires lot of effort and drudgery of women. A low cost food warmer is a new innovation to keep the foods ready to serve and for quick curdling which can prove beneficial for both rural and urban areas. A cheap and innovative warm cover using locally available material has been developed to keep the food warm up to 8 hours at room temperature. Process of making curd is a day long process and even hard especially during winter. Development of the technology was very much need of the hour to replace the old age tradition of covering the hot pot with warm blankets / woolen clothes. In winter food warmer has advantage of making the curd 3-4 hrs. These products have good demand and wider consumer acceptance and can become a remunerative enterprise for rural youth in Kashmir.

**Keywords:** Drudgery reduction, food warmer, entrepreneurship development

### Introduction

Rural women of all ages spend much of their day engagement in domestic chores including collecting water, firewood, processing and preparing food, travelling, transporting and care giving. (Mohanty *et al.*, 2008) [3] Labour saving technologies and practices promote inclusive development by reducing the domestic workload and freeing up to perform productive tasks to participate in decision making, process and development opportunities and to enjoy more leisure time. Women are lagging far behind in the use of technology at farm and energy saving household equipments and this causes a significant physical, mentally exhausted and other health problems (Singh *et al.*, 2016) [1]. Kitchen is considered as the heart of the home and an average Indian woman spends about 5-6 hours in kitchen which accounts to approximately one fourth of her lifespan. Her work in kitchen demands a high degree of physical efforts leading to physiological stress on the part of homemaker. The kitchen work is mainly performed with age old tools in adduces posture causing a lot of drudgery and stress which not only impairs health of women but also affects the quality of life and work performance.

Conveniently designed work areas along with the use of time and labor saving devices exerts minimum stress on homemaker and maximizes the efforts leading to increased productivity, improved work, worker and work place interaction with intervention of drudgery reducing devices in home is very crucial (Bimla *et al.*, 2015). Limited efforts have been made for developing as well as introducing drudgery reducing kitchen technology for women with reference to ergonomic principles. Therefore, the present innovation is an attempt to improve the quality of life of women through intervention of adequate technology into their work areas and at the same time ensuring the better health and work efficiency.

### Material and methods

**Materials:** Sewing scissors, fabric weights, pencil, a ruler, warm cloth, polystyrene sheets (low cost food warmer filler) zipper and thread

**Methods:** The dimension of the pattern pieces needed as desired by the consumer depending on the pot size is marked on the cardboard using the ruler and protractor and create a full size copy of each piece. Accordingly warm cloth and insulating material of polystyrene sheets and cutting and sewing of the box is done. The small piece is the lid and the larger pieces are the body of the box. The low cost food warmer works on the principle of thermal mass and heat conduction through insulated layers and the food items remain warm up to 8 hours. During winter season curd making is a day long process and it takes only 2-3 hours for curdling in this developed low cost technology for rural women.

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## Results and Discussion

With the ever changing technologies times more and more people are appreciating the importance of moving with times. Food warmer is definitely one of the best options that we can think about and this low cost food warmer is not only easy to use but also very convenient to maintain. And we want to transport a readymade hot dish or keep food warm for a longer time without an oven, micro wave or stove we will need to use a food warmer to keep and serve food ready this low cost food warmer keeps food warm through insulated

layers and will work to several hours. It can hold food at safe temperature for human consumption.

The utility of improved low cost technology was judged by keeping rice pot and it was observed that the rice remained warmth up to 8 hours at a room temperature of 9C in comparison to the common and traditional practice. The sensory evaluation was judged by a panel of semi-trained specialist through the sensory scale (Directorate of Rice Research, Hyderabad) as shown in Table 1.

**Table 1:** Organoleptic evaluation of Rice

Practices	Time (hr)	Warmth	Cohesiveness	Tenderness On touching	Tenderness on chewing	Taste	Overall acceptability	Remarks
common	0	4.0	3.0	4.0	4.0	4.0	3.80	excellent Undesirable
	2	1.0	1.0	1.0	1.0	1.0	1.00	
	4	-	-	-	-	-	-	
	6	-	-	-	-	-	-	
	8	-	-	-	-	-	-	
Traditional	0	4.0	3.0	4.0	4.0	4.0	3.80	Excellent good Undesirable Undesirable undesirable
	2	2.0	2.0	2.0	2.0	4.0	3.60	
	4	1.0	1.0	1.0	1.0	3.0	2.00	
	6	1.0	-	-	-	-	-	
	8	-	-	-	-	-	-	
Improved technology	0	4.0	4.0	4.0	4.0	4.0	4.00	excellent excellent excellent good acceptable
	2	4.0	4.0	4.0	3.0	4.0	3.80	
	4	4.0	4.0	4.0	3.0	4.0	3.80	
	6	3.0	3.0	3.0	3.0	3.0	3.00	
	8	2.0	2.0	2.0	2.0	2.0	2.00	

## For quick curdling

Process of making curd is a day long process and even hard especially during winter. Development of the technology was very much need of the hour to replace the old age tradition of covering with warm blankets/woolen clothes. In winter curd

casserole has an advantage of making the curd within 2-3 hours at a room temperature of 10.3C. Its organoleptic score was excellent as compared to good of traditional practice judged by a panel on five point sensory Scale as depicted in Table 2.

**Table 2:** Organoleptic evaluation of curd

Practice	Appearance	Flavor	Taste	Consistency	Overall acceptability	Remarks
Traditional	4.0	3.0	2.0	3.0	3.00	good
Improved Technology	4.0	4.0	5.0	4.0	4.50	Excellent

## Conclusion

The low cost food warmer was designed for the rural women in Kashmir to save additional fuel for heating the food and this would be useful if there was no electricity. Once a dish is hot it can be moved to the food warmer for about 8 hours later with no additional fuel expended and the meal remains hot. Women were trained in low cost food warmer making in order to start their own manufacturing unit. A lady from Harwan Srinagar has been motivated and she has started her enterprise in this venture under the name of Gulshan enterprises. Besides developing these low cost food warmers from the locally available material she was appraised about the availability of material from the local market, financial schemes and marketing skills to get the remunerative returns of their products by selling them in the exhibitions, melas and flea markets. The developed food warmer is in high demand and fetching good returns.

The developed innovation reduces time and drudgery of women and is hygienic, appealing, space saving easy to handle and manage. This low cost food warmer is gaining wider consumer acceptance and is in high demand in the market for daily use and thereby opening avenues for entrepreneurship development.

## References

1. Singh Surabhi, Ahlawat Santosh, Sanwal sarita, Ahlawat TR, Gora Alok. International Journal of Agriculture Sciences. 2016; 8(14):1242-1249.
2. B Sharma, MGogal, AM Begum, R Bhattacharjee Deka, U Goswami. Improved farm tools for women to increase productivity and reduce drudgery-An assessment a research paper in Asian Journal of Home Science. 2015; 10:144-148.
3. Mohanty SK, Behara BK, Satapathy GC. Ergonomics of farm women I manual paddy threshing Agricultural Engineering International; The CIGR E journal Manuscript MES08002.10, 2008.
4. Women friendly farm tools and equipment-All India Coordinated Research Project on ergonomics and safety in agriculture. [www.icar.org.in/N.p.ndWeb](http://www.icar.org.in/N.p.ndWeb). <http://www.icar.org.in/node/914>.