Journal of Pharmacognosy and Phytochemistry

Available online at www.phytojournal.com

E-ISSN: 2278-4136
P-ISSN: 2349-8234
JPP 2018; 7(4): 309-311
Received: 04-05-2018
Accepted: 08-06-2018

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Utility perception of low cost food warmer in Kashmir valley

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Abstract
Since in Kashmir winter adds to the miseries and hardships of women by repeatedly heating up the food items to serve at different intervals of time during the day as food items do not remain warm which is again a challenging job for her. 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. Relative advantage of the technology in terms of utility was assessed through discussion with rural women and maximum number of respondents found beneficial.

Keywords: drudgery reduction, food warmer, entrepreneurship, utility perception

Introduction
Kitchen is considered a heart of the home and on average Indian women spends 5-6 hours in kitchen which accounts for approximately on fourth of her lifespan. Her work in kitchen demands a high degree of physical efforts leading to over exhaustion and stress. 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) [6].

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 equipment's and this causes significant physical, mentally exhausted and other health problems (Singh *et al*. 2016) [1].

Drudgery can be defined as physical and mental strain, fatigue, and monotony and hardship experience by farm women while doing weeding operations (Kumar *et al*. 2011) [5]. 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.

Ergonomics as a science is defined to solve the problem and to help the farm women to work in better condition for which efforts of scientists are required. It is a branch of science that works for easing the task of farm women by equipment, knowledge and surroundings that will suit each worker (Rajendran and Reddy, 2013) [4].

In India, a huge proportion of women are involved in agriculture sector. Their activities vary from land operation to post harvest operations. Most of these works are labour intensive, repetitive, monotonous and causes serious physical and mental strain. Thus resulting in occupational hazards and reduction in work efficiency. The traditional tools are designed according to the male workers physique and farm women are forced to use these tools due to lack of women friendly tools. The traditional tools used by women involves operating in bending or squatting posture which cause drudgery and serious health issues such as back pain, knee pain and sometimes also causes injury. (Khadarkar *et al* 2014) [3].

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.

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 2 4 6 8	4.0 1.0 - - -	3.0 1.0 - - -	4.0 1.0 - - -	4.0 1.0 - - -	4.0 1.0 - - -	3.80 1.00 - - -	excellent Undesirable
Traditional	0 2 4 6 8	4.0 2.0 1.0 1.0 -	3.0 2.0 1.0 - -	4.0 2.0 1.0 - -	4.0 2.0 1.0 - -	4.0 4.0 3.0 - -	3.80 3.60 2.00 - -	Excellent good Undesirable Undesirable undesirable
Improved technology	0 2 4 6 8	4.0 4.0 4.0 3.0 2.0	4.0 4.0 4.0 3.0 2.0	4.0 4.0 4.0 3.0 2.0	4.0 3.0 3.0 3.0 2.0	4.0 4.0 4.0 3.0 2.0	4.00 3.80 3.80 3.00 2.00	excellent excellent excellent good acceptable

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

After the introduction of technology, relative advantage of the technology in terms of utility was assessed through discussion with rural women.

Table 3: Relative advantage of improved technology in terms of utility of low cost food warmer among rural women n=50

Aspects	Existing method	Improved technology	Relative advantage	
			Yes	No
Covering the pot	Blanket/used woolen cloth	Placing the pot within food warmer	42(84.0)	8(16.0)
Hygiene	Unhygienic	highly hygienic	38(76.0)	12(24.0)
Space	More space	Less space	42(84.0)	8(16.0)
Handling	Difficult to handle	Easy to handle	39 (78.0)	11(22.0)

Time	More	Less	40(80.0)	10(20.0)
Portable	Not feasible	Movable	35(70.0)	15(30.0)
Appealing	Non appealing	Attractive	40(80.0)	10(20.0)
Drudgery	More	Less	39 (78.0)	11(22.0)
Size	No	Different	30(60.0)	20(40.0)
Energy	More	Less	38(76.0)	12(24.0)
Cost	Costly	Cost effective	44(88.0)	6((12.0)

Maximum number of respondents 88.0 per cent reported beneficial as compare to traditional technology in almost all the aspects except size of the low cost warmer. Reason may be the size of the pot varies however the low cost food warmer can be customized as per the demand of the consumers.

Conclusion

The developed innovation reduces time and drudgery of women and is hygienic, appealing, space saving easy to handle and manage. 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. 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. Sharma B, Gogal M, Begum AM, Bhattacharjee R, Deka, Goswami U. Improved farm toos for women to increase productivity and reduce drudgery-An assessment a research paper in Asian Journal of Home Science. 2015; 10:144-147.
3. Khadatkar, Abhijit, Potdar RR, Wakudkar H, Narwaria BS. Some drudgery reducing hand tools and equipment's used by women workers in Indian Agriculture. Research Gate. 2014; 42-2:42-49.
4. Ragendran, Poornima, Lokanadha Reddy. Ergonomics in Agricultural Educaion, Cognitive Discourses. International Multidisciplinary Journal. 2013; 1(1). ISSN 2321-1075
5. Kumar Bharat, Govinda PP, Gowda V, Neeta Khandkar. Time and utilization pattern and drudgery of horticulture farmers. International J of Engineering and Management Sciences. 2011; 2(2)93:96.
6. Mohanty SK, Behara BK, Satapathy GC. Ergonomics of farm women on manual paddy threshing Agricultural Engineering International; The CIGR Ejournal Manuscript MES08002, 2008, 10.
7. Shraddha. An ergonomic evaluation of drudgery among rural women PhD thesis department of family resource management CCS HAU Hisar, 2001.