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## Hay box – Indigenous equipment for Indian homes

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### Abstract

Fuel is a non renewable resources, the need for LPG is on increase and may be in the near future the functioning of kitchen may get disrupted. The study was focused on educating the community on the need for conserving fuel. Hay box being indigenous equipment needs only less fuel and keeps food warm for longer period. The box can be made with locally available materials with less cost. But the awareness and popularity can be increased through education class.

**Keywords:** Hay box, indigenous equipment, non-renewable resources

### Introduction

Fuel is the most important need of any home. India derives energy from solid fuel, firewood and cattle dung. It does not matter whether you use electricity, gas, or solid fuel to cook, there can be times when fuel is scarce. At the beginning of the 20<sup>th</sup> century there was a fashion for something called fuel-less cookery. That sounds as though would save of that precious fuel. Fuel-less cookery is an adaptation of a technique used by campers and others spending time outdoors called hay box cookery. Ideas for using this technique can be found in old cookery books which people might have used to help them prepare a meal to eat while on a journey or out for the day. This is an old technique that can use literally what it says, some hay and a box. The idea is that a container of food is heated up to boiling point and then immediately placed in a box surrounded by hay as insulation.

### Objectives

- To study the techniques used for fuel conservation
- To conduct awareness class and study its effectiveness
- To understand the advantages of using hay box

### Methodology

Methodology is the procedure of research technique. Research methodology is a way to systematically show the research problems. It may be understood as a science of studying how research is done scientifically (Kothari 2013).

### Designing and construction of hay box

The hay box was designed and constructed. The materials used for the construction is hay, wooden box, and cotton cloth for making insulating pillows.

### Development of education module

A education module developed was a booklet to teach about the designing and construction of hay box.

### Education class for women and college students

A class was given for – UG students of Morning Star Home Science College Angamaly and hostel, – women of Angamaly about the designing, construction of hay box and how it conserve energy.

### Evaluation

Finally the evaluation was done using pre and post-test forms.

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The students were given the forms immediately after and before the class and they were asked to fill the forms.

**Results and Discussion**

The results of the study are discussed under the following tables and figures

**Table 1:** Techniques used for fuel conservation

Techniques*	Frequency (n=100)
Use Biogas	18
Use low flame when boils	88
Cooks more quantity at a time	6
Close the vessel while cooking	80
Getting ready before starting preparation	4
Any other	58
Uses small vessels	10
One time cooking	24

\*Multiple choice questions

According to the above mentioned table in order to conserve energy, a frequency of 88 people used low flame after boiling. 80 participants closed vessel while cooking in order to conserve energy. The least used method to save energy was of pre-preparation.

**Table 2:** Awareness regarding hay box

Details	Pretest (n=100)		Post-test (n=100)	
	Aware	Unaware	Aware	Unaware
Purpose of hay box	36	64	100	Nil
hay box cooking is nutritious	40	60	100	Nil
Unequal cooking time for different food	42	58	100	Nil
Hay box saves time and money	41	59	100	Nil

The above displayed table denotes that there was been drastic changes after the educational session conducted regarding the awareness of hay box, its uses, advantages etc among the participants. During the pretest phase only 36 participants were aware about the purpose of a hay box. Only 41 were aware of the time and money saving factor regarding hay box. 60 participants didn't even know that hay box cooking is nutritious. 58 people weren't even aware of different time consumption for various foods. After the session there wasn't even a single person who didn't understand the concept and benefits of this energy saving method.

**Table 3:** Awareness regarding types of materials used

Types of materials	Pretest (n=100)	Post-test (n=100)
	Aware	Unaware
Hay	52	100
Plastic	Nil	Nil
Paper	Nil	Nil
Don't know	48	Nil

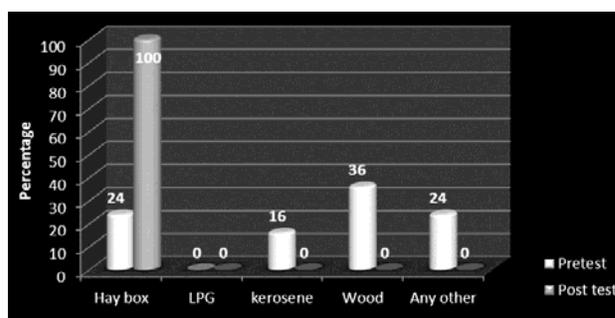
From the above table we can perceive that the awareness regarding the materials used for filling a hay box was a little in pretest. After the session and post-test the results were amazing that everyone were aware about the filling materials used.

**Table 4:** Advantages of hay box

Advantages*	Pretest (n=100)	Post-test (n=100)
Low cost	26	12
Made with locally available materials	17	Nil
Less fuel consumption	10	6
Easy to maintain	Nil	Nil
No supervision is needed	Nil	Nil
No reheating is needed	6	Nil
Conserve energy	Nil	Nil
All above	24	82
Don't know	75	Nil

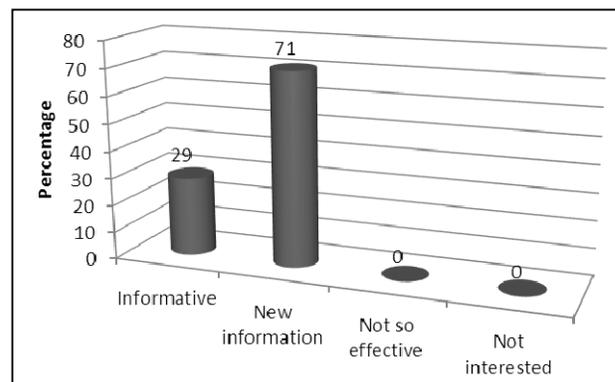
\*Multiple choice question

According to the above table we can see that the awareness about the advantages of hay box was very scarce among the subjects during the pretest. Only the low cost benefit was known to 26 subjects which is the best score among the advantage traits of a hay box. After the session and post-test the results were really good.



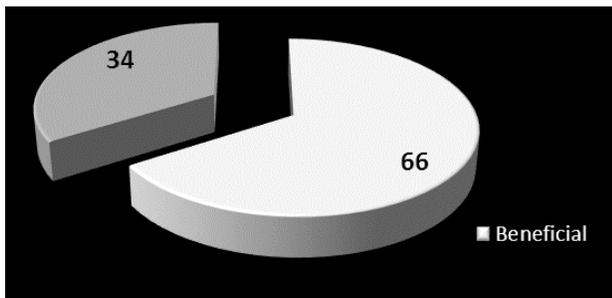
**Fig 1:** Opinion regarding cost effective cooking method

From the above given graph we may presume that a majority of people shared an opinion that wood is the most cost effective cooking method on the pretest evaluation. Hay box had only the third place and no one considered LPG as one. After the session and post-test all without any opposition chose hay box as the most cost effective method of cooking.



**Fig 2:** Opinion regarding class

From the above given graph we can assume that the entire educational session was informative to all participants. While 29 people among the participants agreed on that the entire session was informative, the rest of the participants, ie, 71 people asserted on the session that it was not only informative but also contained a lot of new information.



**Fig 3:** Opinion regarding benefits

Almost 34 participants among the 100 had an opinion that hay box is not that beneficial as other cooking methods. But 66 subjects found that hay box is indeed a beneficial cooking method that can be adapted during this difficult time of energy consumption scarcity.

### Conclusion

Use of low flame and many other methods were used to conserve fuel. Awareness class was found to be effective based on pre and post-test. Classes helped in creating awareness of the advantages of using haybox. Hay box was considered as the most cost effective cooking method. Class was informative and beneficial.

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