

THAAPABHARANI



- Energy Management Centre-Kerala has developed an energy efficient equipment called “Thaapabharani”, a very cost-effective thermal cooker.
- Thaapabharani is a thermo-container which preserves heat by reducing thermal losses. It is ideal for cooking rice.
- Thaapabharani is designed to suit the requirements of the people of Kerala considering their special dietary habits.
- Studies shows that this thermo-container can save upto 75 percent of cooking energy while cooking rice.

How does it Work ?

The thermo-container design is based on the heat transfer principle. It is made up of insulated material covered in an easy to handle laminated box. When the rice starts boiling, the cooking pot is taken out of the gas stove or other cooking devices and kept within the thermo-container on a convenient place. Since there is only negligible heat loss, rice boils within the thermo container. The energy required for cooking rice is only that much needed for just boiling the rice. Afterwards, the latent heat does the subsequent cooking. Experimental results show that using Thaapabharani, about 75 percent of energy and time can be saved.

What are the Advantages ?

These are the advantages of using *Thaapabharani*:

- saves energy upto 75%*
- saves time for cooking*
- saves cost of fuel*
- reduces time and presence near cooking area*
- reduces health hazards*
- reduces environmental pollution*
- low cost of production and easy operation etc.*

What are the Environmental Problems due to Firewood burning ?

The environmental problems due to the excessive firewood burning are :

1. Pollution from the emissions which causes severe health problems
2. Deforestation and loss of ecological balance
3. Cutting down of trees from homesteads for wood requirements
4. Pollution by transport while taking the wood to the consumers from the forest area.
5. Contribute to global warming in two ways;
 - (a) due to reduced forest biomass and the resultant reduction in CO₂ absorption
 - (b) due to emissions of green house gases from the burning of firewood.

How does Thaapabharani benefit?

Due to the peculiar dietary habits of the people of Kerala, rice is consumed atleast for two meals a day. The cooking of rice alone needs 60% (approx.) of the cooking energy. Also a large percentage of people in Kerala (80 %) still use firewood alone for cooking. Huge saving in cooking energy can considerably reduce the firewood consumption and environmental pollution.

The impact on environment by using this device can be explained as below:

- Reduced consumption of firewood, Cooking Gas and Electricity.

- Less time near fire reducing the inhaling of emissions from firewood consumption and hence better health.
- More time for other activities and leisure.
- Reduction of transportation of firewood from the forest area to the user end (In Kerala the total coastal length is 580 Km and 9 Districts out of 14 Districts are in the coastal area. Hence firewood has to be transported from the forest area to the users by an average distance of 75 Km).
- Reduced transportation can mitigate pollution by controlling the emissions from the carrier vehicle and saves precious auto fuels.
- Restoration of forest area because of less felling of trees for firewood. Restoration of forest area helps in protection of large number of biomes and animal species. (Forest area in Kerala is 10,334 sq.km ie 26 % of the geographical area.)