

Fuel efficient two-in-one stove⁵⁷

CONSOLATION

Jyothi Ravishankar, a 33-year-old housewife and a mother of two children, hails from Madar village in the South Canara district of Karnataka. She has a degree in Law, but she is not a practicing lawyer. She lives in a joint family of seven members. Jyothi has received ample encouragement from her husband and family members to pursue her innovation. During her spare time Jyothi pursues her hobbies such as sketching, painting and stitching.

Genesis As a child Jyothi had observed that, while cooking on the traditional hearth, which is still prevalent in most houses in the rural areas of South India, nearly 50% of heat was being wasted and it gets unbearably hot near the hearth. Firewood being a non-renewable source of energy, she thought of developing some manner of using this heat energy that is being wasted. Her resolution was strengthened by the fact that it is very difficult to procure enough supply of firewood, especially for the poor. This formed a perfect backdrop for the birth of the idea and she designed this stove, which would help save fuel as well as prevent wastage of heat. In the process of developing her innovation, she encountered some difficulties. She was not able to get the cooperation from the mechanics at the workshop when she sought their help for building her stove and she had to run around a lot to get things done.

Jyothi has installed this modified stove unit in her kitchen along with five meters of plumbing to connect the hot water to the tank in an adjacent room to work as a (non-electric) geyser and has been using it successfully for the last three years.

Word has spread regarding her innovation. NIF has sanctioned Jyothi Ravishankar a sum of Rs.5, 625 from the Micro Venture Innovation Fund for making the prototype to conduct market survey of the Stove cum Water Heater.

The Innovation

This is a multipurpose energy efficient utility stove which captures the wasted radiated heat in a wood fired stove to simultaneously cook as well as heat water in a tall drum to a temperature of 80 degrees.

The unit works on the principle that cold water flows down and hot water rises up. The arrangement consists of a stainless steel enclosure-envelope on three sides of a wood fired stove and two pipes which are connected to the stove. These pipes are connected to the pipes from the boiler in the bathroom. Cold water comes in from the bottom inlet pipe, gets heated and passes out of the hot water pipes to go and fill a stainless steel hot water container. A separate tap is attached to the hot water pipe on the side of the oven to collect mugs of hot water for making tea, coffee. Thus while the food gets cooked in the oven, the hot water fills in

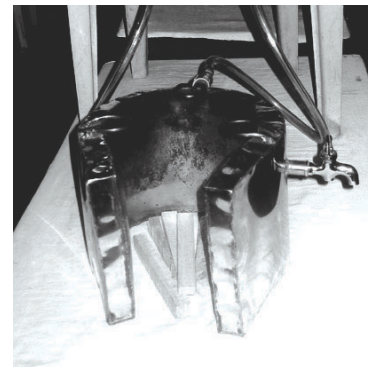


Address

Amdalu (at post),
Madanthyar – 574 444,
Tal: Bethangadi, South
Kannada, Karnataka

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from the top into the tall drum placed on a stool behind the stove. In two hours up to 150 liters of hot water at 80 degree centigrade is made available in the drum. The entire unit is portable and can be set up anywhere. The cost is around Rs. 1000 because the water chamber of the stove is made of stainless steel to prevent rusting.

Advantages

The novelty of the device lies in the fact that with the same source of heat two functions can be performed simultaneously- for example cooking and heating water in the boiler. There is efficient energy utilization of burnt wooden fuel-stock. It has a wide potential in rural homes where gas cylinders are too expensive, not available or where the supply is erratic.

A housewife with a difference

Jyothi's aim in life is to spend a happy and contented life with her family. At the same time, she is no

ordinary housewife. She has proved that along with being a mother and shouldering the responsibilities of home and family, there is a lot that one can do to contribute to save the environment.

She believes that this two-in-one stove of hers will definitely be useful to society and especially to the poor farmer because after a hard day's work toiling in the field, he would definitely welcome a hot water bath and that too without spending any extra fuel. Satisfied with the good response she got from local people and institutions she is motivated to innovate further. She specially remembers with gratitude the efforts of noted litterateur and writer, Shri. P.Ramakrishna Shasthri who brought her work into the limelight.

Finally she says about herself "Though I have a degree in law, I am a contented housewife now. But in future I would like to work or do some kind of business and put my education to good use."

