

Technology for Energy-Saving Cooking Vessel

CSIR-IIP designed and developed an energy-saving cooking vessel based on the principle of waste heat recovery to reduce the cooking time and improve the overall thermal efficiency. This vessel also keeps the food hot for a longer period.

Introduction

- Energy Saving Vessel (ESV) is made with aluminium for cooking in domestic or commercial setups.
- In cooking burners the loss of heat energy is quite high due to poor adjustment of flame height from the tip of the burner and bottom of the vessel.
- The heat transfer from the hot burner to the vessel is also limited due to the lower residence time and dilution with surrounding air.
- In most cooking operations, burners are operated at higher power than required to reduce cooking time.
- The ESV has a jacket around the conventional cooking vessel.
- In ESV hot flue gases enter flow through the annular space between the jacket and the vessel.
- This enhances the overall heat transfer to the vessel due to increased contact area and residence time and thus partially recovers the heat from the flue gases.
- The food placed in the ESV remains hot for longer periods
- The utensil sector covers ~20% of the Aluminium market and there are >4000 Aluminium utensil manufacturers in India

Salient Features

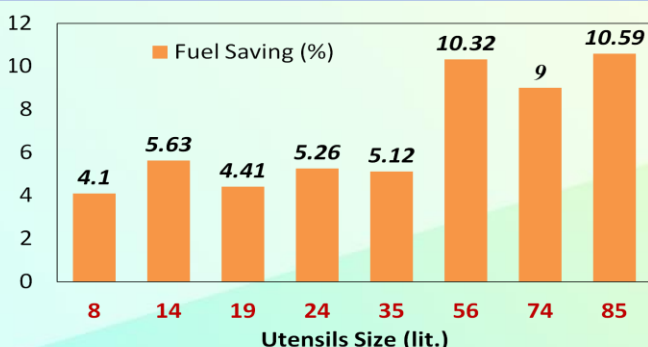
- Saves fuel (LPG/PNG) by 5-10%
- Shorter cooking time
- Keeps cooked food hot for a longer time
- Very good for boiling rice, pulses, potatoes, and other vegetables
- 100% indigenous technology.
- Available in 8 to 105L sizes



Energy Saving Vessel



Burner and ESV assembly depicting the flue gas flow path



Fuel saving data for different utensil sizes



Boiling of rice and vegetables in various restaurants

CSIR-IIP is conducting field trials and is ready for licensing of ESV technology

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