IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Volume 2, Issue 8, May 2022
Impact Factor: 6.252

Alternative Fuel Option for Kerosene Wick Stove: Blended Ethanol (20%) and Kerosene (80%)

Adsul Baba Govind[1], Patil Ujwala Kishor[2], Mulik Vaibhav[3]
Head of Department, Science Dept, Bharati Vidyapeeth Institute of Technology, Navi Mumbai[1]
Assistant Professor, Science Dept, Bharati Vidyapeeth Institute of Technology, Navi Mumbai[2]
Assistant Professor, Mechanical Dept, Bharati Vidyapeeth Institute of Technology, Navi Mumbai[3]

Abstract: *To solve the energy crisis, the search for alternative fuels is extensively important. Alternative fuels selected should be renewable, sustainable, and eco-friendly. In India, kerosene is also used as fuel in cooking stoves. Kerosene contains impurities like sulphur, aromatics, and hydrocarbons, which cause environmental degradation. In this experimental investigation, blends of ethanol and kerosene were used as an alternative fuel in a kerosene wick stove without any modification to the stove design. The blends tested were 5%, 10%, 15%, and 20% ethanol in kerosene. The experimentations have been carried out to obtain comparative measures of thermal efficiency and fuel consumption rate. The values of thermal efficiency and fuel consumption rate for blended fuel were found to be comparable with kerosene. The maximum value of thermal efficiency was obtained with a blend containing 5% ethanol while the minimum value was obtained with reference fuel. The fuel consumption rate for the blend containing 10% ethanol was found to be maximum.*

Keywords: Wick stove, Kerosene, Eco-friendly fuel, Ethanol, etc.

REFERENCES

[1] P. C. Jain and M. Jain, Engineering Chemistry, (Dhanpat Rai Publishing Company Pvt Ltd, New Delhi, 1998).
[2] M. Y. Khan and P. Pachauri, Performance evaluation of wick stove fuelled with Jatropha curcas oil-kerosene blends, NIET Journal of Engineering and Technology, I, 2010, 63-66.
[3] S. Kakati, Effect of heat losses on the overall performance of kerosene fuelled capillary fed wick stove, Proc. 1ST National Conference on Advances in Energy Research (AER-2006), Department of Energy System Engineering, Indian Institute of Technology, Mumbai, 2006.
[4] V.K. Pantangi, A.S.S.R.K. Kumar, S. C. Mishra, and N. Sahoo, Performance analysis of domestic LPG cooking stoves with porous media, International Energy Journal, 8, 2007, 139-144.
[5] M. Y. Khan, A. Saxena and K. P. Singh, Performance of insulated LPG burner with ball bearings as a porous medium, People's Journal of Science and Technology (PJST), 1 (2), 2012, 12-15.