

Harnessing fuel-energy from biomass for drudgery reduction in rural households

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Received: 22.04.2013; Accepted: 25.09.2013

■ **ABSTRACT** : Household sector is one of the largest users of energy in India, accounting for about 30 per cent of total energy consumption, thereby, reflecting the importance of this sector in total national energy scenario. Nearly all rural households and one-third of urban households do not use clean cooking fuel. It is well documented that about 80 per cent of the energy used in rural areas for cooking is derived from biomass, dung cakes and firewood. Women spend 4 to 6 hours of their productive time in fetching biomass / fuel-wood for cooking and carry it as a head-load. Children are also involved in collection of fuel-wood in their school hours. Use of loose biomass as fuel for cooking is the major cause of indoor air pollution in developing countries as it is used in poorly functional wood-stoves. Combustion of biomass leads to high levels of health damaging pollutants such as carbon monoxide, nitrogen oxides, formaldehyde, benzene, aromatic hydro-carbons and many other toxic compounds. Exposure to smoke from burning of biomass fuel is responsible for several diseases such as acute respiratory infections, tuberculosis and asthma, low birth weight, and cataract and blindness, thereby, adversely affecting the health of women and children to a great extent. Therefore, in Indian households, energy problem is not only a problem of the scarcity of energy but also of inefficient combustion and related health problems. Briquetting and pelletizing is an appropriate technology for harnessing renewable fuel-energy from this huge stock of biomass. Conversion of biomass into pellets and burning it in improved pellet stoves can help to overcome the problem of inefficient combustion besides mitigating the health problems associated with smoke pollution. Improving access to this affordable, clean, smoke-free energy is critical for reducing women's drudgery and improving the quality of life in rural areas. This will ultimately result in maintaining sustainable health of the environment and the economy.

■ **KEY WORDS** : Biomass, Fuel energy, Pelletizing, Rural households

■ **HOW TO CITE THIS PAPER** : Shukla, Shivangi, Singal, Savita and Sharma, D.K. (2013). Harnessing fuel-energy from biomass for drudgery reduction in rural households. *Asian J. Home Sci.*, 8 (2): 754-758.

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