

Proposal for economic disposal of sawdust as an alternative energy source: A Case Study

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Abstract

Many of the developing countries produce huge quantities of biomass residues but they are used inefficiently causing extensive pollution to the environment. In Sri Lanka, many of sawmills and wood product industry owners produce enormous quantity of sawdust annually and they are facing the problem of disposing of their wood residue because disposal by land filling or pushing over the side of hill are no longer legal. Alternatively, in order to minimize environmental pollution and also to extract its energy content, the sawdust can be burnt. However, the utilization of sawdust in their natural form as a fuel is difficult because of their very low bulk density, low heat release and the excessive amount of smoke generated. Sawdust densification, which is also known as briquetting of sawdust could mitigate these problems successfully.

Briquetting of sawdust has been practiced for many years in several countries. But it is yet to get a strong foothold in Sri Lanka because of the technical constraints involved and the lack of knowledge to adapt the technology to suit local conditions. Consequently the objective of this study is to develop the fundamentals of sawdust briquetting technology for energetic utilization while reaching the targets of solving the problem of harmful dumping and burning of sawdust in sawmills and producing a cheap, easily storable and eco-friendly bio-fuel for domestic cooking and heating purposes and traditional sector industrial usage like biomass boilers, tea dryers etc.

The paper proposes a method for economic disposal of sawdust as an alternative energy source and it includes the experiments conducted on determining the technological fundamentals of briquetting sawdust as a Biofuel and testing on firing ability and thermal values of loose sawdust and sawdust briquettes. This describes a case study conducted with Elipitiya Lifestyle Solutions (Pvt) Ltd who is one of a rubber lumberman for international market.