ECONOMIC VIABILITY OF BAGASSE AND RICE HULL AS COMPOSITE MATERIAL FOR PANELBOARD PRODUCTION

A Special Problem
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by:

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INTRODUCTION

Philippines,today presses towards continuing progress as evident in the government's master plan of industrialization and better life for the Filipinos. One major thrust of the government is the Medium term shelter program. Under Republic Act 7279 known as the "Urban Development and Housing Act", policy of the State is to uplift the conditions of the underpriviledged and homeless citizens by making available decent housing at affordable cost (5th Regular Session Congress of the Philippines, 1-2). This entails very great demand for construction materials in order to implement the program. Projected housing units required is 4.2 million nationwide (National Census and Statistics Office 1990-1996 Projections). Aside from the housing units, commercial and industrial buildings, schools, hospitals and others further increase the need for construction materials (Pulido, 1). In Negros Occidental alone, 1993 year-end report of the National Housing Authority (NHA) showed a target of 49,559 housing units with only 31,631 units started construction, this represent only 64% compliance of the target number of housing units (See Exhibit A).

The high demand of construction materials poses a great problem. Wood, a priority construction material is suffering accelerated depletion in supply. On the other hand, existing cement manufacturing industries cannot cope up with the demand resulting in insufficient supply with an

equivalent high cost and oftentimes delayed completion of construction work . Price of cement in Negros Occidental alone for the first quarter of 1995 shows instability starting from an average of P83/bag in January and soars up to as high as P130/bag in May (See Exhibit B).

New technologies at present are geared towards utilization of fibrous agri-wastes into usable alternative materials as an answer to increasing cost of construction materials. One available technology being implemented now is the processing of cement-bonded composite material out of woodwool or bagasse. Although this technology partly solves the present condition of high cost and supply shortage of material but it is still dependent on cement supply.

With the aim of providing similar technology for production of low-cost, durable and readily available materials, this study pursues the improvised processing of bagasse-rice hull composite material into panelboards as a plywood and cement-bonded board substitute. The proposed scheme uses waste sugarcane bagasse, as the base material for the panelboard. This approach is commonly used in related process, however, instead of using cement as a binder, a cement substitute will be utilized through pulping of bagasse and kilning of rice hull together with waste lime at specified temperature into ash. The rice hull ash formed usually acquires cement-like properties aside from the "felting" property of pulp bagasse (Baluscang,3).

STATEMENT OF THE PROBLEM:

With the urgent need of technologies focusing on the processing of alternative construction materials that are cheaper and readily available than cement-bonded boards and plywood, this study aims to address the question: "Will a bagasse-rice hull composite material for panelboard production in the absence of a cement-binder be economically viable?"

PURPOSE OF THE STUDY:

General Objective: This study is conducted to provide an improvised processing of bagasse-rice hull composite material for panelboards that is economically viable without the use of a cement as a binder.

Specific Objectives: This study further aims to

a.) utilize available wastes from locally existing industries as raw materials for production.

b.) determine feasibility of mass production of the panelboards.

c.) find out other possible applications or commercial utilization of the panelboards aside from being a construction material as plywood substitute.