ABSTRACT

An increasing number of industries in the region will lead to an increase in the quantity of emission and absorption job-employee. Which in turn, the number of employee to drive proportionally to the number of workplace accidents, especially in the production process. Sugarcane industry is one of the industry that quite a lot in Indonesia and has a considerable environmental impact as well as the number of workplace accidents that often occurred. Due to the absolutly of machinery and technology in that industry. In order to improve the quality of process production, this research propose to utility Quality Function Deployment (QFD).

QFD is a method used to translate the preferences and the needs of consumers which will be used as a basis for the development and design of the production process. Consumers in this study is the manager of finance and administration, plantation, utilities and human resources. The attributes of the production process are obtained from the literature, interview, observation and processing using the method of Life Cycle Assessment. The attributes are then be processed in the House of Quality to obtain priority technical response. Next steps several scenarios design production processes are applied to obtain the smallest environmental impact.

This study has two improvement scenarios, scenario 1 is the replacement of an initial amount of 4 mills to 6 mills, replacement of SO₂ with H₃PO₄, the use of alternative energy from bagasse and rice straw. The environmental impact of scenario 1 is 120 Pt. While the scenario 2 is replacement of an initial amount of 4 mills to 6 mills, replacement of CaO with dolomite and use of alternative energy from bagasse and rice straw. The environmental impact of scenario 2 is 116 Pt. Scenario 2 has a lower environmental impact compared to scenario 1.

Keyword: Environmentally friendly industry, Quality Functions Deployment, design of production process, sugar industry, Life Cycle Assessment
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