DEVELOPMENT OF PORTABLE SEMI-AUTOMATIC CULTIVATOR FOR GREY OYSTER MUSHROOM PRODUCTION

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ABSTRACT

Grey oyster mushroom project run by Entrepreneur Action Us (ENACTUS) is highly demanded by staff and food seller in Universiti Teknologi Mara (UiTM) Dungun, still the poor production rate is due to several factors, mainly time-consuming harvesting method. In addition to lack of time to maintain the production of the mushroom, the stock is rendered low; thus, consumers' request cannot be fulfilled on time. Therefore, a portable semi-automatic mushroom cultivator is proposed to assist and hasten the harvesting process of the mushroom. This portable cultivator is equipped with electronic tally-counter to count the number of block mushroom that has been harvested and mini vacuum to clean the block area to keep it in hygienic condition. The whole project is controlled by Arduino Atmega328p as the main microcontroller and the output is displayed on LCD screen. The portable cultivator has been simulated and tested on breadboard and achieved a good result. In a nutshell, this project will provide the mushroom business a boost in their production by hastening the process.

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND STUDIES

Grey oyster mushroom is widely popular due to its high amount of nutrients and vitamins which makes them a healthy diet. It is free from fat, cholesterol, gluten, low in calories and sodium. The nutrient such as iron are mostly found in Oyster mushrooms is higher compared than in the meat. This product can be highly profited due to high demands by people who tend to have and consume a healthy diet to maintain their physical bodies, in addition they are also easy to cultivate. The mushroom only needs moisture to grow up. There is no need for further fertilisation and pesticide to keep them growing.

1.2 OVERVIEW OF PROBLEM

The grey oyster mushrooms have several processes in order to get the final product finished. But in this project only focus on one of those process which is the harvesting process. Harvesting consume a lot of time and need to be done in hygienic method to prevent the mushroom block being infected by bad bacteria. Based on previous background studies in and survey to the certain target of audiences or farmers, the production rate is low due to the conventional method in harvesting the mushroom. Mostly the mushroom farmers are still manually using the human labour in harvesting their mushroom. It takes a lot of time to clean the block mushroom and thus, slow down the production rate.

1.3 SCOPE OF STUDIES

Therefore, this portable semi-automatic cultivator has been invented in this project. The objective of this project is to design, model and developed the portable mushroom cultivator that is capable to increase the mushroom production by shortening the cleaning time.

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