UNIVERSITI TEKNOLOGI MARA

DESIGN AND FABRICATION OF WHEEL HOE AND WHEEL HILLER (WHOLLER)

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ABSTRACT

Many economies, especially those in developing nations, are based mostly on agriculture. Conversely, a number of issues commonly faced by small-scale farmers restrict their output and financial success. The absence of contemporary agricultural tools and equipment, which results in tedious, time-consuming, and ineffective work, is one of the biggest challenges.The limits of conventional agricultural tools—which need a lot of physical labour, time, and resources—were brought to light in the issue statement. The goal of the project was to create an efficient and economical instrument that would relieve farmers' workloads and boost their output. To maximise the tool's performance, this design project used simulation and computer-aided design (CAD) technologies. This project includes other mechanical components in addition to (CAD), such assembly, drilling, welding, fitting, and others. Welding, assembling, and the usage of easily accessible materials were all part of the fabrication process. An easy-to-use, reasonably priced, and effective tool for planting, growing, and weeding was the anticipated outcome. This instrument will support sustainable agricultural methods and increase small-scale farmers' output.

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INTRODUCTION

1.1 Background of Study

The foundation of many economies, particularly those in emerging nations, is the agriculture sector. But a lot of obstacles frequently stand in the way of small-scale farmers' profitability and production. The absence of contemporary agricultural tools and equipment is one of the biggest problems, since it makes their task difficult, time- consuming, and inefficient. Low yields, weariness, and injury are the results of using traditional agricultural instruments like hoes and shovels, which demand a lot of human labor.[1]

In order to overcome these obstacles, suitable and affordable agricultural instruments that boost small-scale farmers' output must be created. Due to their high cost, small-scale farmers do not have easy access to tools like the wheel hoe and wheel hiller, which are utilised in large-scale farming operations.[2]

Consequently, the goal of this project is to develop and build an affordable wheel hoe and wheel hiller that small-scale farmers may use.

Farmers will be able to plant, cultivate, and weed their crops more easily and precisely with the development of such equipment, increasing agricultural yields and profitability. Additionally, by lowering the need for human labour and increasing resource efficiency, the employment of contemporary technologies will support sustainable agricultural practises.