SYNOPSIS

TITLE **: DESIGN AND FABRICATION OF PADDY-DUST CLEANNING MACHINE**

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INTRODUCTION

Agriculture is very important for a country's economic stability and welfare. If a country's agricultural sector is so productive that it can yield enough to feed the country's entire population, it does not have to import food from other countries. If the country's agriculture sector is so productive that it can produce enough to feed the population as well as create a surplus which can be exported, that results in great economic gain for that particular country. If, however, a country's agricultural sector is unproductive and is unable to produce enough to meet the needs of its population, it adversely affects that country's economy since then it has to import food stuff from other countries which costs a lot. As a result the goods are sold in the local markets at higher rates which the most of its population can't afford. Thus, it leads to inflation and economic instability. Therefore, it is very important for any country to have a healthy and productive agricultural sector which can provide for its population and also boost trade with other countries.

Portable Paddy-Dust separating Cleaning Machine is designed to remove foreign materials and impurities such as sand particles, stones, paddy straws and foreign seeds from paddy. This machine provides farmers an alternative replacement of current conventional method should the farmers want to extract the paddy seed in small scale amount. Currently, they only use a traditional winnowing technique as to obtain the seeds to be used next season or before processing paddies to become rice.It helps farmers improvise their traditional method, reduces purchasing cost of paddy seed and utilizes the cleaning process at low cost and less maintenance.

OBJECTIVES

1. The objective of this project work is to design and fabricate a paddy and dust separting machine being economical, portable, and compact.

2. The scope of present work is to address the issues of preparing a machine convienient to farmers to convey the machine at critical places and serve the purpose with ease.

3. Through this paddy cleaning machine the farmers can easily get rid of debris like sticks, leaves stones, and dust which gets collected during the process of harvest and drying.

METHODOLOGY

1. Meet the farmers and discuss the exact requirement in order to have a precise conclusion on the size of the equipment and needs to satisfy.

2. Frame a problem statement such to address the need of stake holder.

3. Conceptual design considering the load, work completion time.

4. Do the market survey to find availability of materials as per design and finalise the actual machine parameters.

5. modeling of the designed machine.

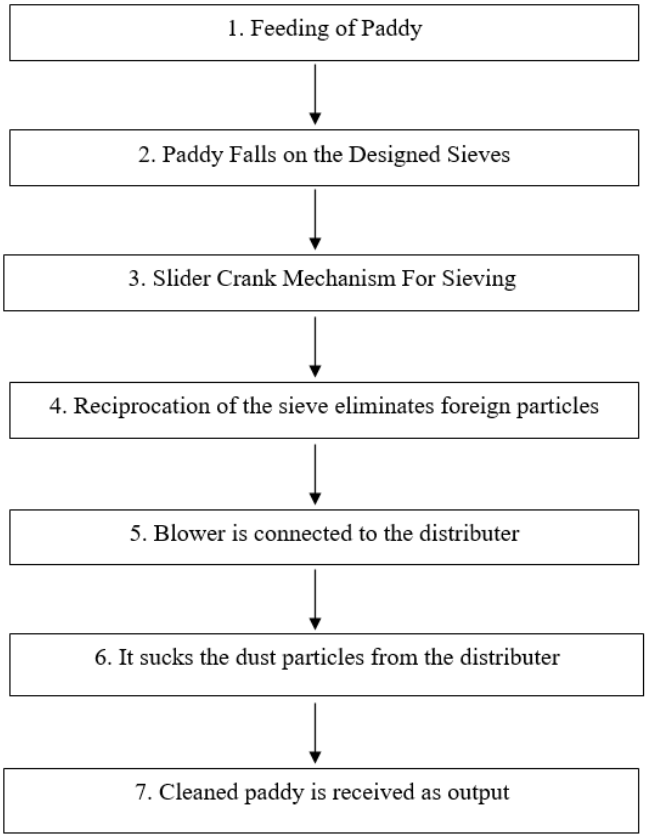
6. Fabrication.

7. Testing and evaluation.

8. Report writing.

WORKING BLOCK DIAGRAM

The sequences of operations are as follows



The working principle of a paddy dust separating machine is as follows:

Feeding: The paddy grains are fed into the machine.

Separation: The grains are then passed through the sieve or perforated drum, which separates the dust and husks from the paddy grains.

Blowing: The separated dust and husks are blown away from the machine using a blower, while the clean paddy grains are collected in a separate container.

RESULTS / OUTCOMES

We created a paddy-dust seperating machine that is compact, portable, and multifunctional while also taking into account the drawbacks of the current paddy cleaner. Affordable enough for small farmers to buy it and effective at cleaning of paddy.

• The outcome of present work is reduce the time and effort invested by the farmer towards paddy cleaning process. Design a machine which is convenient to carry and place at critical places.

• Reduce the time of collecting the seperated paddy which presently invested on the traditional method followed by the farmers. Compared to manual cleaners, a mechanical cleaner is much faster.

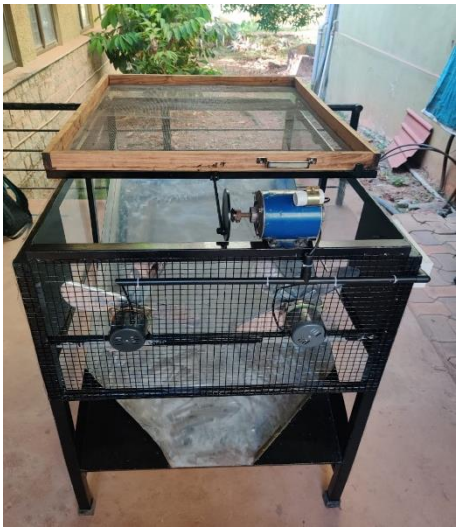
• The design of this machine makes it easy for a single operator to complete the cleaning process.

• This machine significantly lessens the main problem of the grain being harmed in the current cleaning machines. So, grain loss is kept to a minimum.

• Because there are few moving components on this machine, maintenance is minimal.

• The machine is inexpensive and accessible to farmers.

FINAL FABRICATION



SCOPE FOR THE FUTURE WORK

To eliminate chaff and foreign matter and to increase the quality of paddy grains manual grading with a sieve has been popular. Other methods include separation under natural air stream, washing with a cleaning basket, sieving with a manual sieve, and hand grading. However, commercially produced and used seed cleaners and graders achieve very high levels of efficiencies (over 98%). Compared to manual cleaning, Paddy may be cleaned on a larger scale. The paddy cleaning equipment now on the market and in use are large. The current ones are more expensive because they are built for a bigger capacity. These devices are large, bulky, and heavy. The paddy cleaning devices that are now in use are not portable, but there are various ways that we may change that. Conveyor belts and one motor can be utilised in place of two. This won't work not just shrink in size and weight but also in price.