

DESIGN AND FABRICATION OF SESAME PEELING MACHINE

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Keywords:

Sesame Crops, Threshing, Vibration Sieving

Introduction:

This new era focuses on solving the problem faced by the farmers. One such problem involves separating of the seeds from the Sesame Plant. Farmers use the traditional methods to remove the seeds from its plant. This process requires a large amount of space to spread the dried crops. These dried crops are then grouped together in bunches on the fields. The crop bunches are beaten one by one until the seeds fall out, and the waste is segregated from the seeds, and the seeds are collected in bags.

The time required to extract seeds and the amount of human labour required for the traditional method is more which in turn results in increased cost of production. This shows that there is need to find a better way to peel the sesame seeds from its plant with minimum resources spent. The aim of the project is to minimize the time and labor consumed for the harvesting of the sesame crops using threshing mechanism and sieving through vibration. It should be easy to use and the machine should be cost effective so that it can be available to small scale farmers as well.

Objectives:

1. To Make it in Compact size.
2. To make it With Less investment cost.
3. Time consumed for the process should be less.
4. To make it With Less maintenance cost.
5. To make it so that it can be easily adopted by farmers.
6. Would have Less Labor requirement.
7. Machine life should be more than 10 years.

Methodology:

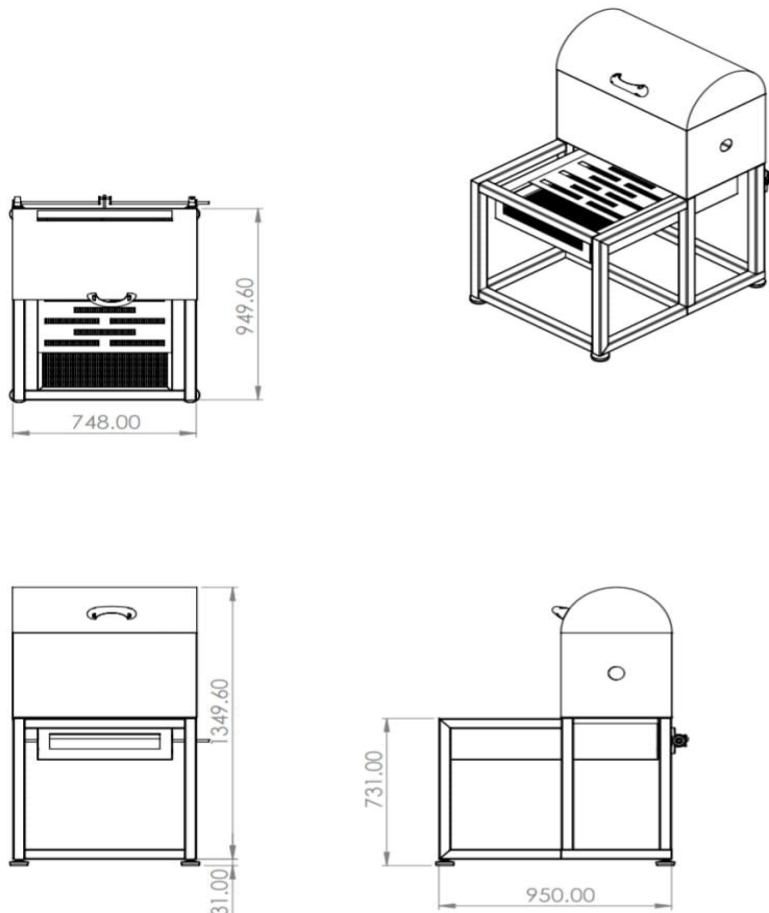
Threshing:

Threshing is the process of loosening the edible part of grain (or other crop) from the straw to which it is attached. It is the step in grain preparation after reaping. Threshing does not remove the bran from the grain. Threshing may be done by beating the grain using a flail on a threshing floor.

Vibration Sieving:

In vibrational sieving, the sample is submitted to three dimensional movements. A circular movement superimposes a vertical throwing motion. This mechanism causes the particles to be uniformly distributed across the entire sieving surface and to be thrown into the air where they ideally change their orientation in a way that enables them to be compared to the sieve apertures in all probable dimensions.

Design:



Conclusion:

With the use of threshers, it has benefited both the farmer and consumer as the use of threshers enable the farmer to produce more yield in less time, which increases supply and allows trade of grains to several nations. Due to enormous cost of sesame thresher, purchase of this machinery becomes a burden on small scale farmers, and due to the complexity behind such machinery, the maintenance of such machines are also expensive. To enable a small-scale farmer to compete with large scale farmers the Sesame thresher was designed with making the cost low and working simple. The Sesame thresher is having following advantages while compared with the existing models of this kind in the market. The analyzing of advantages helps to motivate the fabrication of sesame peeling machine in this kind. The important advantages of the prototype are given below: Reduce manpower, increase productivity, Reduce seed damage.

Scope for future work:

1. Future aim to be used for large scale.
2. To be converted into multipurpose seed peeling machine (by changing the seive plate)
3. To get profit out of it by releasing the product to market.
4. By mass production reduces the cost of product.