DESIGN AND FABRICATION OF PEPPER THRESHER MACHINE

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INTRODUCTION:

The thrashing machine, or, in modern spelling, threshing machine (or simply thresher), was a machine first invented by Scottish mechanical engineer Andrew Meikle for use in agriculture. It was invented (c.1784) for the separation of grain from stalks and husks. For thousands of years, grain was separated by hand with flails, and was very laborious and time consuming. Mechanization of this process took much of the drudgery Out of farm labour.

In this project we design and fabricate a machine for the purpose of threshing the peppers. In many industries even now the peppers are separated manually. Due to this manual process in industries there is wastage of money and time. In order to avoid this wastage we have designed the following model called pepper thresher machine. This is an advanced and easy process to separate pepper from the plant. In this process we do not need any high electrical supply to operate the machine. This model has the following parts in it: Rotating drum, a hopper and cam operated tray arrangement.

OBJECTIVE:

Project aims to replace the inefficient, labour intensive manual threshing process and to automate the pepper threshing process at the required rate with minimum damage to the pepper berries.

METHODOLOGY:

1. Hopper
2. The threshing drum
3. The grain outlet
4. Power transmission system
5. Pulley
6. Stand
7. Single phase induction motor
8. Bearing

The above mentioned parts are used for various purposes in this model to operate it. A motor provided in the model is used to actuate the whole model. Pulley is attached to the rear side of the rotating drum. This pulley is connected with the drive by means of belt as shown in the diagram. The motor is rotated with the help of belt arrangement. The drum is rotated with
the constant speed of 75 rpm. Bottom having tray is used to collect the pepper. This tray is oscillated with the help of cam mechanism. This cam mechanism also operate with the help of same A.C motor.

RESULTS:

<table>
<thead>
<tr>
<th>ROLLERS</th>
<th>ROLLER 1</th>
<th>ROLLER 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>INPUT(kg)</td>
<td>1.3</td>
<td>1.3</td>
</tr>
<tr>
<td>OUTPUT(kg)</td>
<td>0.75</td>
<td>0.3</td>
</tr>
<tr>
<td>TIME(min)</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>

CONCLUSION:
ROLLER 1 is prefered, which gives more output than ROLLER 2.

SCOPE FOR FUTURE WORK:
1. High HP motor can be used in future to get greater output.
2. Automatic feeding of the pepper to the machine can be done.
3. Conveyor can be added to the setup.