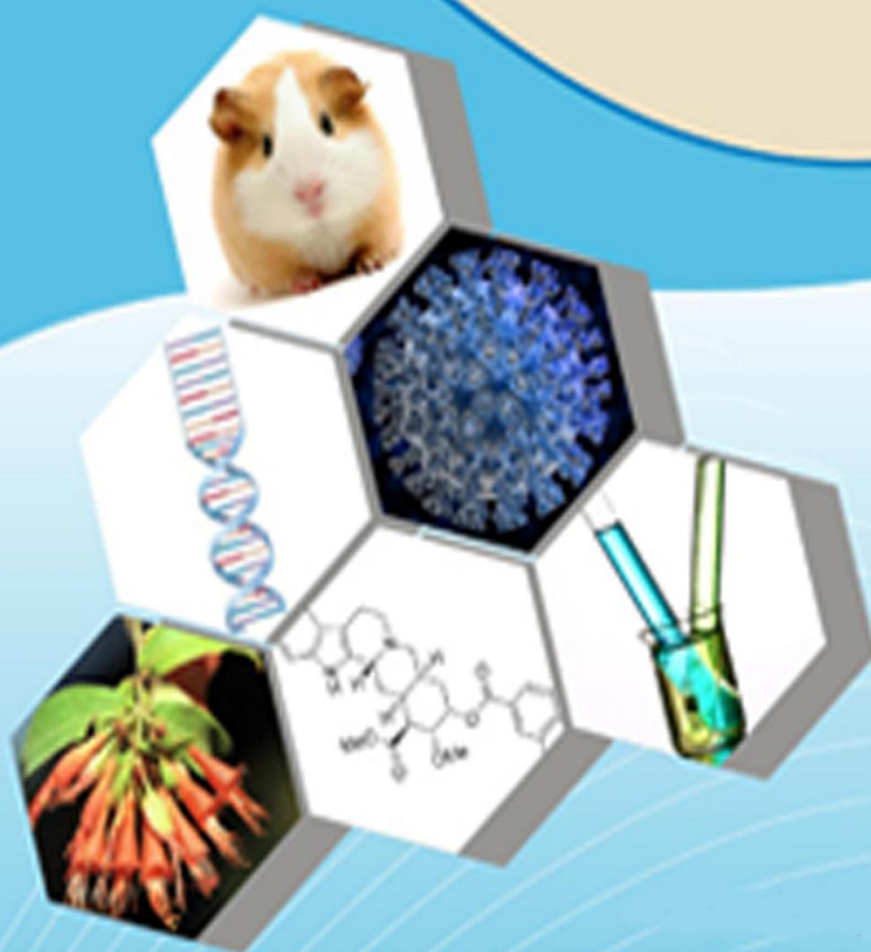




ISSN : 2347-2251
Indo-American Journal of
Pharma and Bio Sciences



www.iajpb.com

iajpb.editor@gmail.com
editor@iajpb.com

This article can be downloaded from
<http://www.iajpb.com/currentissue.php>



FABRICATION OF RICE PLANTING MACHINE OPERATED MANUALLY

Mr.P.Shashikanth¹, Mr.V.VinodKumar²

ABSTRACT

Agriculture is the backbone of India's economy. Indian rice production accounts for a significant share of the country's labor force. In rice cultivation, it is common practice to transplant seedlings by hand. Not to mention, it's a difficult task that takes a lot of effort and money. Automating transplantation has been the focus of several attempts to design and construct transplanting machines. A small-scale farmer cannot afford an automated paddy transplanter without government assistance. Manual paddy transplanters, both cheap and efficient, have been the subject of research. Design considerations include the selection of an efficient power transmission system and an appropriate mechanism for driving the planting claw.. Small-scale farmers throughout the country will benefit from this project's objective of creating a method for them to transplant rice seedlings.

Keywords: Rice seedling transplanter Wheels and rocker arms may be stored in this tra1.

INTRODUCTION

India, each acre of rice produces an average production of 2.2 tons of rice. Rice is a staple food for more than half of the world's population. For most people, it provides 20% of their daily calorie needs. 3.5 billion people throughout the world depend on rice to get by on a daily basis. Sowing rice seedlings in the field is accomplished with the use of agricultural equipment known as Rice Transplanters. Saplings may be transplanted more quickly and efficiently by using this method, allowing for more time to harvest. Planting rice seedlings in a field is done by a paddy transplanter, as indicated earlier on. Creating a method for transplanting rice seedlings has the following as its major

objective. Improving the efficiency of the traditional rice planting technique without sacrificing the method's fundamental objective. Increase productivity to reduce the risk of sickness and injury. By offering customized services, we want to provide rural youth an additional source of income.

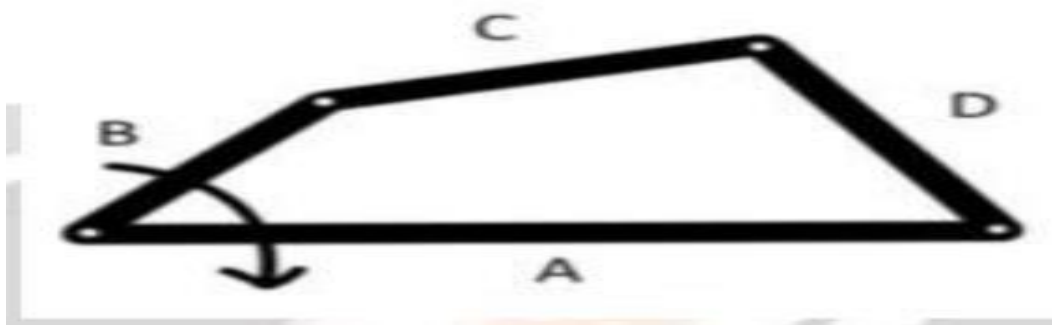
First and foremost, an instrument that is easy to buy, repair and maintain is what we're looking for. As a means of lowering labor costs. Compared to manual rice transplanting (1–2 ha/day vs. 0.07 ha/day), this procedure is far less time and labor demanding. Time-consuming physical work like paddy planting is also eliminated. Section 1.1: Literature Exam

¹Assistant Professor, Department of Mining Engineering, Malla Reddy Engineering College (Autonomous), Hyderabad, Telangana, India, 500100.

²Assistant Professor, Department of Mining Engineering, Malla Reddy Engineering College (Autonomous), Hyderabad, Telangana, India, 500100

Design and development of rice planter machines Vol. 5, No. 7, July 2016, ISSN 2347-6710 Phate and Patil, both from the University of Mumbai, According to their findings, the 3 row rice transplanter was by far the most successful transplanting tool after comprehensive testing and research of several aspects. Our two-row rice transplanter is less expensive to produce than a three-row model because of the additional costs. Two) A Manual Rice Transplanter Design and Fabrication Analysis. Kumbhar, Satish, SangramKhot, March 2017, Vol. 6, No. 3, ISSN 2347-6710. You'll pay far less than you would for a rice transplanter that is powered or operated by hand. The four-bar arrangement reduces the machine's weight by using fewer Ramapuram, SRI Technology: Rice Cultivation and Rice Cultivation Costs

parts. The four-bar mechanism on our rice transplanter machine is a consequence of this. Evaluating the Ergonomic Design of a Six-Row Paddy Transplanter Issn: 147-157, 2007 This was the most crucial factor in determining how much force could be generated from push-pull forces employed. Leg length and height, as well as the location of the handle and the torso, all affected push-pull strength. Another factor that might impact how much energy workers consume is their posture when doing various tasks, according to the research. A bending-pose transfer required the greatest effort. A healthy body posture is essential while performing a transplant because of the push and pull pressures.



1.2 Developing and implementing a strategy

Rice transplanters put out mat-type seedling nurseries in seedling trays. The tray revolves like a typewriter carriage while pick-up prongs pluck seedlings from the tray and put them in the ground. Plants are pushed into the ground by pick-up prongs that act like human fingers. The mechanism of this machine is driven by a wheel, thus it doesn't need any further setup. Plant health may be detected early on thanks to the machine's low-noise transplanting arms and the machine's four-bar mechanism. With a compact design and a small footprint, the machine is simple to transport and operate in the field.

Fig1: "Four Bar Linkages," as seen We use a "Four bar mechanism" in the Rice Transplant Machine to accomplish the process. Mechanisms with four bars include: Linkage Crank may rotate 360 degrees with a fixed link in the linkage. Rocker for Couplers A limited range of motion is possible with this arm. Crank and lever are joined by a connecting rod. These are the main components of manual rice transplanter, which is composed of the following: Chains, Sprockets, and Tray Shaft Bearing Wheels for the Rocker Arm Connecting Rod

Working-A tray is used to hold paddy

seedlings, which are let to fall naturally to the



ground. When the seedlings are removed from their trays, the fork attached to the shaft supports them horizontally on the skid. A chain and sprocket system is used to move the wheel and shaft by hand..

meathat the Crank will be able to rotate freely. The rocker arm is being driven by the movement of the coupler. The fork is a portion of the coupler that is used to remove the seedlings from the tray. The fork will oscillate up and down due to the crank's movement. While travelling downhill, the fork follows a curving path that is difficult to follow. While traveling, the fork

Working Mechanism" shown in the second figure.

Paddy seedlings are being planted in the field with the help of a simple four bar. This mechanism features a fixed Link, which

Once the dirt falls, we'll take out the seedling trays and put them in the ground. In a few seconds, the fork will reach its maximum point, and it will continue to do so until the rotation is stopped. With a limited range of motion, the rocker arm oscillates.



1. CONCLUSION

An automated paddy transplanter will substantially aid in rice transplantation since the agricultural field is of average size in the area. It will also lessen farmers' need on manpower for transplantation. There are seven advantages to using a manual rice transplanter, including using less water and less room to raise seedlings of the mat type. It reduces the cost of the expensive seed by half. Uprooting the seedlings costs nothing. The raw-to-raw distance is fixed because of the machine transplanting.

2. REFERENCES

- Dhanesh D. Patil and Mangesh R. Phate, Design & Development of Rice Planter Machine, ISSN 2347-6710, Vol. 5, Issue 7, July 2016.
- Issn 2347-6710 Vol. 6, Issue 3, March 2017.
- [2] Design Analysis and Fabrication of Manual Rice Transplanter, Satish Kumbhar, SangramKhot.
- Rajvir Yadav and Mital Patel, Ergonomic

Evaluation of Manually Operated Six-Row
Paddy Transplanter (ISSN: 147-157), 2007 [3].
4. Ramapuram Rice Cultivation Costs
Impacted by SRI Technology