VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"Jnana Sangama" Belagavi – 590 010

PROJECT REPORT ON

"DESIGN OF FEEDER–WEEDER ROBOT FOR AUTONOMOUS FARMING"

Submitted in partial fulfillment of the requirements for the award of degree

BACHELOR OF ENGINEERING
IN
ELECTRONICS & COMMUNICATION ENGINEERING

Submitted By

Name	USN
ROHAN D'SOUZA	4AL13EC067
ARUN KUMAR K.V	4AL14EC011
CHETHAK	4AL14EC023
DEEPIKA	4AL14EC027

Under the Guidance of

Mr. Santhosh S
Assistant Professor
Department of E&C Engineering

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY

MOODBIDRI – 574 225.

2017-2018

ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY

MOODBIDRI – 574 225

(Affiliated to VTU, **BELAGAVI**)

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

CERTIFICATE

Certified that the project work entitled "**DESIGN OF FEEDER–WEEDER ROBOT FOR AUTONOMOUS FARMING**" is a bona fide work carried out by

ROHAN D'SOUZA	**4AL13EC067**
ARUN KUMAR K V	**4AL14EC011**
CHETHAK	**4AL14EC023**
DEEPIKA	**4AL14EC027**

in partial fulfillment for the award of BACHELOR of ENGINEERING in **ELECTRONICS & COMMUNICATION ENGINEERING** of the **VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI** during the year 2017–2018. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the Bachelor of Engineering degree.

23/5/18	D.V.M 23.05.18	
Signature of the Guide	**Signature of the H.O.D**	**Signature of the Principal**
Mr. Santhosh S	**Dr. D V Manjunatha**	**Dr. Peter Fernandes**

H.O.D
Dept. Of Electronics & Communication
Alva's Institute of Engg. & Technology
Mijar, MOODBIDRI - 574 225

PRINCIPAL
Alva's Institute of Engg. & Technology,
Mijar, MOODBIDRI - 574 225, D.K.

EXTERNAL VIVA

Name of the Examiners	Signature with date
1	.....
2	.....

ABSTRACT

Agriculture is known as backbone of Indian economy. A large number of rural households depend upon agriculture as their primary source of livelihood. Recent advances in technology have made it possible to increase output as well as reduce dependence on manual labor. Fertilizers are chemical components which are not advisable to be touched in bare hands. When nitrogen based fertilizers are manually applied to roots, some will fall to bare land which leads to growth of weeds on those areas. The fertilizers which are essential for growth of plants are also causing the growth of weeds. These weeds are traditionally removed by manually plucking them. The solution derived from this project is to use grid system for sowing plants. This way it is easier to differentiate between plants and weeds. The robot can fertilize only the required area around root cavity, this avoids human error of spilling. In the grid system the positions of plants is known before so that any other plants can be considered as weeds and they can be removed.

Feeder-weeder for autonomous farming, considered a scenario where all of the work done on farms is automated by a group of autonomous robots working together in sync with each other. The concepts such as microcontroller programming, communication, path planning, sensor interfacing can be used. Agricultural field with many crops growing in it is considered in this project, some of these crops need to be fed red fertilizer and others need to be fed blue fertilizer. There are some weeds growing in the field which need to uprooted and disposed outside the field. Two fertilizing robots and a weed removing robot are deployed in the field. In order to make this system work more efficiently, the robots communicate between each other to share information and coordinate with each other.