

COMMUNITY SERVICE PROJECT

ON

CROP ROTATION



CHEBROLU ENGINEERING COLLEGE

CHEBROLU

DEPARTMENT OF

COMPUTER SCIENCE ENGINEERING

NAME OF THE COLLEGE : CHEBROLU ENGINEERING COLLEGE

DURATION OF THE CSP PROJECT : 18/10/2022 to 29/11/2022

NAME OF THE STUDENT : BANDREDDY VEDA KEERTHI

PROGRAM OF STUDY : CROP ROTATION

YEAR OF STUDY : 2021-2022

REGISTRATION NO : 21HU1A4212

CHEBROLU ENGINEERING COLLEGE

DEPARTMENT OF COMPUTER SCIENCE ENGINEERING

Structural chart of organizing body



Name of the project

CROP ROTATION

Members involved in this project work

BANDREDDY VEDA KEERTHI
(21HU1A4212)

Under The Esteemed Guidance Of

Mrs.R.Sravanthi

Professor

DEPARTMENT OF COMPUTER SCIENCE ENGINEERING

Community Service Project Report

Submitted in accordance with the requirement for the degree of....

Name of the college : Chebrolu Engineering College

Department : Computer Science and Engineering (AI & ML)

Name of the faculty guide : R. Sravanthi

Duration of the CSP project : 18/10/22 to 29/11/22

Name of the student : Bandreddy Veda Keerthi

Program of the study : Crop Rotation

Year of study : 2nd

Register no : 21HUIA4212

Date of submission :

Student's Declaration

I, Bandreddy Veda Keerthi, a student of B.tech Program,
Reg. No. 21HUIAU212 of the Department of CSE(CAIML)
chebrolu Engineering College do hereby declare that I have completed
the mandatory community service from 18/10/22 to 29/11/22 in
Crop Rotation (Name of the Community/Habitation) under the Faculty
Guideship of R.Sravanthi, (Name of the Faculty Guide), Department
of CSE in College

B.Veda Keerthi
(Signature and Date)

Endorsements

Faculty Guide R.Sravanthi

Head of the Department V. Dinesh Babu

Principal

Certificate from Official of the Community

This is to certify that Bandreddy Veda Keerthi (Name of the Community Service Volunteer) Reg. No 21HUIAU4212 of chebrolu Engineering College (Name of the College) underwent community service in Kuchipudi (Name of the Community) from 18/10/22 to 29/11/22. The overall performance of the Community Service Volunteer during his/her community service is found to be _____ (Satisfactory/Good).

K. Venkateswaran
Authorized Signatory with Date and Seal
AGRICULTURAL OFFICER
INTEGRATED AGRI TEST
ENALI-522 201

Acknowledgments

We would like to express our special thanks of gratitude to all who supported us in completing the project directly or indirectly.

First and foremost, we would like to express our gratitude to our awe-inspiring chairman **Dr.R.V.Krishnaiah** and respected vice president **G.M.Chowdary**, for providing us supportive and autonomous environment to complete the Community Service Project.

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We also thank all our friends for their invaluable help deduced by them during the course of the project. Finally, we would like to dedicate the whole work to our parents for their everlasting love and constant encouragement given by them during the period, even during miles apart

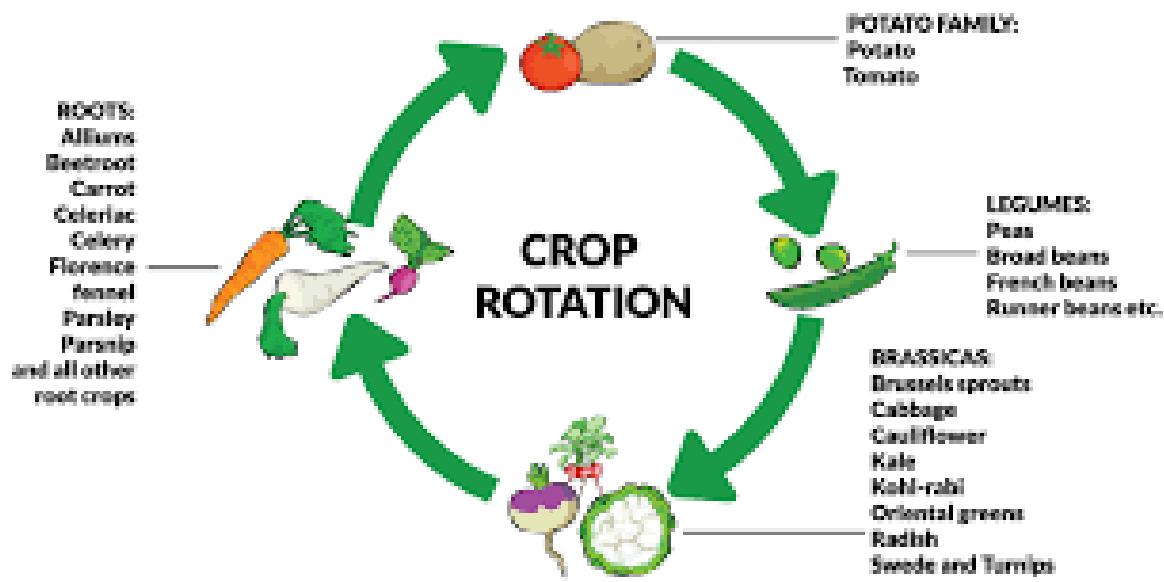
By Project Associates

21HU1A4212

B. Veda Keerthi

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While crop rotation might not be a generally used practice, it is a practice that can promote soil health. Barley-soybean rotations with ryegrass or red clover increased the concentration of organic aggregates after just two cycles of the rotation in Canada .

Further, the use of ryegrass increased microaggregation.

However, other times crop rotations might not positively affect soil organic matter accumulation.

Similarly, corn and soybean yields were not different under continuous crop than those in crop rotation in Piedmont and Coastal Plain soils of North Carolina .

Similarly, soybean yields were 5% greater with no-tillage in the Piedmont, but there was no yield difference in the Coastal Plain. This increase in yield with no-tillage was attributed to greater soil water availability.

CHAPTER 1: EXECUTIVE SUMMARY

crop rotation, Successive cultivation of different crops in a specified order on the same fields. Some rotations are designed for high immediate returns, with little regard for basic resources. Others are planned for high continuing returns while protecting resources.

A typical scheme selects rotation crops from three classifications: cultivated row crops (e.g., corn, potatoes), close-growing grains (e.g., oats, wheat), and sod-forming, or rest, crops (e.g., clover, clover-timothy). In general, cropping systems should include deep-rooting legumes.

In addition to the many beneficial effects on soils and crops, well-planned crop rotations make the farm a more effective year-round enterprise by providing more efficient handling of labour, power, and equipment, reduction in weather and market risks, and improved ability to meet livestock requirements.

ACTIVITIES

- Conducting a survey in the village of Kuchipudi.
- Identifying the problems in the village Kuchipudi.
- Interacting with the villagers
- Solutions
- Awareness Programme
- Interacting with seed sellers
- Meeting agriculture office
- Visited organic fertilizer centre
- Met organic farmers
- Recommendations

CHAPTER 2: OVERVIEW OF THE COMMUNITY

About Kuchipudi

Kuchipudi is a Village in Amruthalur Mandal in Guntur District of Andhra Pradesh State, India. It belongs to Andhra region . It is located 33 KM towards East from District head quarters Guntur. 9 KM from Amruthalur. 313 KM from State capital Hyderabad

Kuchipudi Pin code is 522313 and postal head office is Kuchipudi .

Mulpur (3 KM) , Chinnaparemi (3 KM) , Pedaravuru (3 KM) , Pothumarru (3 KM) , Manduru (4 KM) are the nearby Villages to Kuchipudi. Kuchipudi is surrounded by Tenali Mandal towards North , Tsundur Mandal towards west , Amruthalur Mandal towards South , Kollipara Mandal towards North .

Tenali , Ponnur , Repalle , Guntur are the near by Cities to Kuchipudi.



Kuchipudi is a Village in Amruthalur Mandal in Guntur District of Andhra Pradesh State, India. It belongs to Andhra region . It is located 33 KM towards East from District head quarters Guntur. 9 KM from Amruthalur. 313 KM from State capital Hyderabad



Agriculture

The total geographical area of the kuchipudi is 1075 hectares. Kuchipudi is the part of capital region development authority (CRDA).it is 34.9km from the Guntur.

The agriculture is the major occupation for the people .

The area useful for farming is 872.00 hectares.

Total irrigated area 872.00 hectares.

Unirrigated area 27.00 hectares.

Area not available for cultivation 176.00 hectares.

Kuchipudi village is located in Amruthalur mandal of Guntur district in Andhra Pradesh, India. It is situated 13km away from sub-district headquarter Amruthalur (tehsildar office) and 40km away from district headquarter Guntur. As per 2009 stats, Yedavuru is the gram panchayat of Kuchipudi

The Kuchipudi village has a rich



According to Census 2011 information the location code or village code of Kuchipudi village is 590386. Kuchipudi village is located in Amruthalur mandal of Guntur district in Andhra Pradesh, India. It is situated 13km away from sub-district headquarter Amruthalur (tehsildar office) and 40km away from district headquarter Guntur. As per 2009 stats, Yedavuru is the gram panchayat of Kuchipudi village.

The total geographical area of village is 1075 hectares. Kuchipudi has a total population of 6,788 peoples, out of which male population is 3,299 while female population is 3,489. Literacy rate of kuchipudi village is 63.49% out of which 69.02% males and 58.27% females are literate. There are about 1,903 houses in kuchipudi village. Pincode of kuchipudi village locality is 522313.

Block / Mandal → Amarthalur

District → Guntur

State → Andhra pradesh

Kuchipudi Pin code is 522313 and postal head office is Kuchipudi .

There are 2 schools in Kuchipudi :

Sri koganti vari high school

Sacred hearts em high school



population censes in Kuchipudi village:

Census Parameter	Census Data
Total Population	6788
Total No of Houses	1903
Female Population %	51.4 % (3489)
Total Literacy rate %	63.5 % (4310)
Female Literacy rate	29.9 % (2033)
Scheduled Tribes Population %	3.6 % (246)
Scheduled Caste Population %	34.2 % (2320)
Working Population %	49.1 %
Child(0 -6) Population by 2011	619
Girl Child(0 -6) Population % by 2011	53.2 % (329)

CHAPTER 3: COMMUNITY SERVICE PART

INTRODUCTION:

Crop rotation is the practice of planting different crops sequentially on the same plot of land to improve **soil health**, optimize nutrients in the soil, and combat pest and weed pressure.

For example, say a farmer has planted a field of corn. When the corn harvest is finished, he might plant beans, since corn consumes a lot of nitrogen and beans **return nitrogen** to the soil.

A simple rotation might involve two or three crops, and complex rotations might incorporate a dozen or more.



The sequence of four crops (wheat, turnips, barley and clover), included a fodder crop and a grazing crop, allowing livestock to be bred year-round. The four-field crop rotation became a key development in the British Agricultural Revolution.

Farmers in the region of wassland (in present-day northern Belgium) pioneered a four-field rotation in the early 16th century, and the british agriculturist Charles townshend (1674–1738) popularised this system in the 18th century. The sequence of four crops included a fodder crop and a grazing crop, allowing live stock to be bred year-round. The four-field crop rotation became a key development in the British agricultural revolution. The rotation between arable and ley is sometimes called ley farrming.

Two-field systems

Under a two-field rotation, half the land was planted in a year, while the other half lay fallow Then, in the next year, the two fields were reversed. In China both the two-field and three-field system had been used

since the Eastern period.^[3] From the times of Charlemagne (died 814), farmers in Europe transitioned from two-field crop rotation to a three-field crop rotation.

Three-field systems

From the end of the middle ages until the 20th century, Europe's farmers practiced a three field rotation where available lands were divided into three sections. One section was planted in the autumn with rye or winter wheat, followed by spring oats or barley; the second section grew crops such as peas, lentils, or beans; and the third field was left fallow. The three fields were rotated in this manner so that every three years, one of the fields would rest and lie fallow. Under the two-field system, if one has a total of 600 acres (2.4 km^2) of fertile land, one would only plant 300 acres. Under the new three-field rotation system, one would plant (and therefore harvest) 400 acres. But the additional crops had a more significant effect than mere quantitative productivity. Since the spring crops were mostly legumes, they increased the overall nutrition of the people of Northern Europe.

Four-field rotations

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Row crops

Many crops which are critical for the market, like vegetables are row crops (that is, grown in tight rows). While often the most profitable for farmers, these crops are more taxing on the soil. Row crops typically have low biomass and shallow roots: this means the plant contributes low residue to the surrounding soil and has limited effects on structure. With much of the soil around the plant exposed to disruption by rainfall and traffic, fields with row crops experience faster break down of organic matter by microbes, leaving fewer nutrients for future plants.

In short, while these crops may be profitable for the farm, they are nutrient depleting. Crop rotation practices exist to strike a balance between short-term profitability and long-term productivity.

Green manure

Green manure is a crop that is mixed into the soil. Both nitrogen-fixing legumes and nutrient scavengers, like grasses, can be used as green manure. Green manure of legumes is an excellent source of nitrogen, especially for organic systems, however, legume biomass does not contribute to lasting soil organic matter like grasses do.^[9]

Intercropping

Multiple cropping systems, such as intercropping or companion planting , offer more diversity and complexity within the same season or rotation. An example of companion planting is the three sisters, the inter-planting of corn with pole beans and vining squash or pumpkins. In this system, the beans provide nitrogen; the corn provides support for the beans and a "screen" against squash vine borer; the vining squash provides a weed suppressive canopy and a discouragement for corn-hungry raccoons.

Double-cropping is common where two crops, typically of different species, are grown sequentially in the same growing season, or where one crop (e.g. vegetable) is grown continuously with a cover crop (e.g. wheat). This is advantageous for small farms, which often cannot afford to leave cover crops to replenish the soil for extended periods of time, as larger farms can. When multiple cropping is implemented on small farms, these systems can maximize benefits of crop rotation on available land resources.

Organic farming

Crop rotation is a required practice, in the United States, for farm seeking organic certification. The “Crop Rotation Practice Standard” for the national organic program under the US Federal union section §205.205, states

Farmers are required to implement a crop rotation that maintains or builds soil organic matter, works to control pests, manages and conserves nutrients, and protects against erosion. Producers of perennial crops that aren’t rotated may utilize other practices, such as cover crops, to maintain soil health

In addition to lowering the need for inputs (by controlling for pests and weeds and increasing available nutrients), crop rotation helps organic growers increase the amount of biodiversity their farms. Biodiversity is also a requirement of organic certification, however, there are no rules in place to regulate or reinforce this standard. Increasing the biodiversity of crops has beneficial effects on the surrounding ecosystem and can host a greater diversity of fauna, insects, and beneficial microorganisms in the soil as found by McDaniel et al 2014 and Lori et al 2017. Some studies point to increased nutrient availability from crop rotation under organic systems compared to conventional practices as organic practices are less likely to inhibit of beneficial microbes in soil organic matter.

While multiple cropping and inter cropping benefit from many of the same principals as crop rotation, they do not satisfy the requirement under the NOP



While a small portion of “Field Corn” is processed for use as corn cereal, corn starch, corn oil and corn syrup for human consumption, it is primarily used for livestock feed, ethanol production and manufactured goods. It's considered a grain. Sweet corn is what people purchase fresh, frozen or canned for eating.

The topping of plants is for seed corn production. The tassels are removed so that plants can only be pollinated by other plants. The rows that are topped are females rows.

Typically, farmers are asked to leave entire passes across the field so the adjustor can get an idea of conditions in the entire field.

Paddy field:



paddy, also called rice paddy, small, level, flooded field used to cultivate rice in southern and eastern Asia. Wet-rice cultivation is the most prevalent method of farming in the Far East, where it utilizes a small fraction of the total land yet feeds the majority of the rural population.

Fields can be built into steep hillsides as adjacent to depressed or steeply sloped features such as rivers or marshes. They require a great deal of labor and materials to create and need large quantities of water for irrigation. oxen and water buffalo adapted for life in wetlands, are important working animals used extensively in paddy field farming.

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Rice was domesticated as early as 3500 BC, and by about 2,000 years ago it was grown in almost all of the present-day cultivation areas, predominantly Field corn is primarily grown for livestock feed and ethanol production is allowed to mature fully before being shelled off the cob and being stored in silos, pits, bins, or grain "flats".

Field corn can also be harvested as high-moisture corn, shelled off the cob and piled and packed like silage for fermentation; or the entire plant may be chopped while still very high in moisture, with the resulting silage either loaded and packed in plastic bags, piled and packed in pits, or blown into and stored in vertical silos.

People may pick ears of field corn when its sugar content has peaked and cook it on the cob or eat it raw. Ears of field corn picked and consumed in this manner are commonly called "roasting ears" due to the most commonly used method of cooking them.

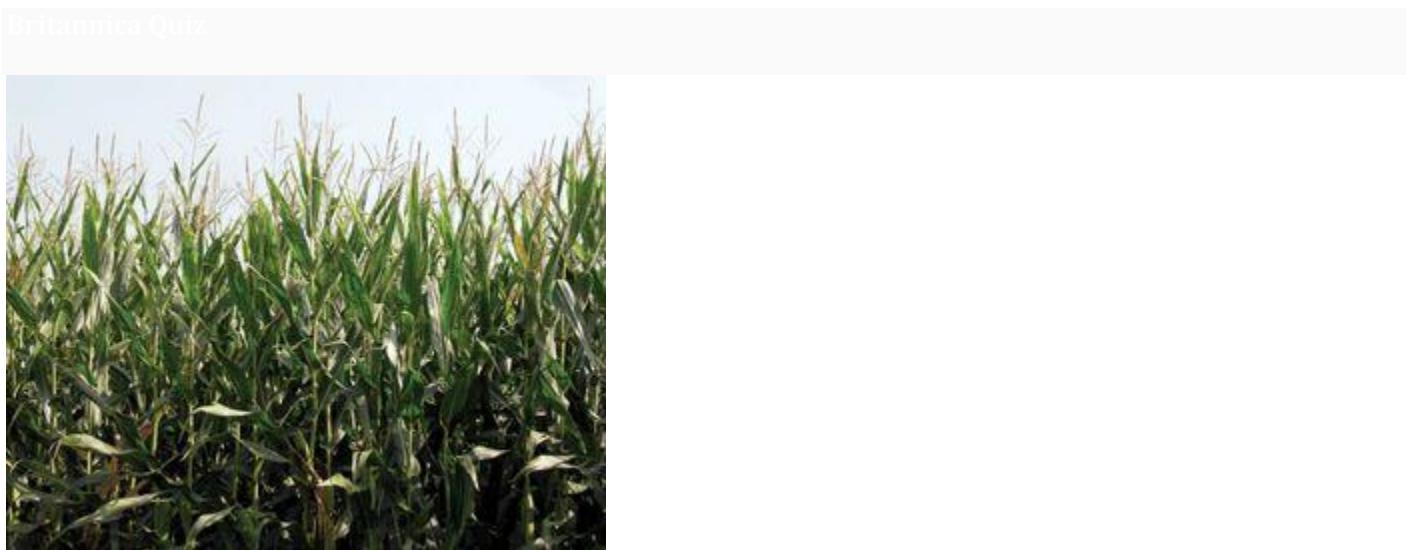
CORN FIELD:

The Corn Belt is a region of the United States that, since the 1850s, has dominated corn production in the United States. In the United States, corn is the common word for maize. More generally, the concept of the Corn Belt connotes the area of the Midwest dominated by farming and agriculture.[\[1\]](#)[\[2\]](#)

Types of corn



Commercial classification, based mainly on kernel texture, include flint corn, flour corn, sweet corn, and popcorn. Dent corn, primarily grown as animal feed and for food manufacturing, is characterized by a depression in the crown of the kernel caused by unequal drying of the hard and soft starch making up the kernel. Flint corn, containing little soft starch, has no depression; it is used for decoration and is eaten as hominy in the Americas. Flour corn, composed largely of soft starch, has soft, mealy, easily ground kernels and is an important source of corn flour. Sweet corn, commonly sold fresh, frozen, or canned as a vegetable, has wrinkled translucent seeds; the plant sugar is not converted to starch as in other types. Popcorn, an extreme type of flint corn characterized by small hard kernels, is devoid of soft starch, and heating causes the moisture in the cells to expand, making the kernels explode. Improvements in corn have resulted from hybridization, based on crossbreeding of superior inbred strains.



Many industrial and feedstock varieties of corn are Genetically modified organisms (GMOs) engineered for resistance to the herbicide glyphosate or to produce proteins from *Bacillus thuringiensis* (Bt) to kill specific insect pests. In addition, some strains have been genetically engineered for greater drought tolerance and to increase their nutritional value. Most of the corn grown in the United States is GMO, which may reduce the need for herbicides and insecticides.

- Traditional agriculture is mostly done in poor countries.
- Intensive agriculture is mostly done in countries with more money. It uses pesticides, machinery, chemical fertilizers.
- Organic farming is using only natural products such as compost and green manure.
- Integrated farming is using local resources and trying to use the waste from one process as a resource in another process.

Farming is the act or process of working the ground, planting seeds, and growing edible plants. You can also describe raising animals for milk or meat as farming. Farming is a great way to describe the lifestyle and work of people whose jobs are in the agriculture industry.



Agriculture provides most of the world's food and fabrics. Cotton, wool, and leather are all agricultural products. Agriculture also provides wood for construction and paper products. These products, as well as the agricultural methods used, may vary from one part of the world to another.

The main steps for agricultural practices include preparation of soil, sowing, adding manure and fertilizers, irrigation, harvesting and storage.

OBJECTIVES:

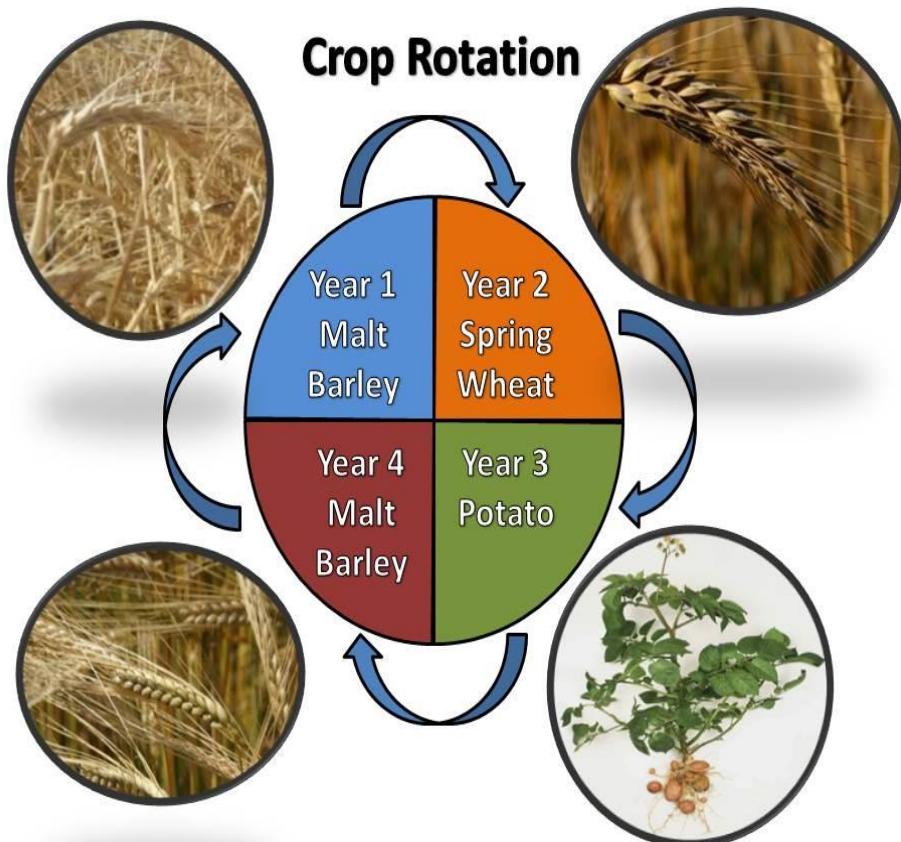
A preliminary assessment of crop interrelationships can be found in how each crop

- contributes to soil organic matter (SOM) content
- provides for pest management
- manages deficient or excess nutrients
- how it contributes to or controls for soil erosion
- interbreeds with other crops to produce hybrid offspring, and
- impacts surrounding food webs and field ecosystems

Crop choice is often related to the goal the farmer is looking to achieve with the rotation, which could be weed management, increasing available nitrogen in the soil, controlling for erosion, or increasing soil structure and biomass, to name a few.

When discussing crop rotations, crops are classified in different ways depending on what quality is being assessed: by family, by nutrient needs/benefits, and/or by profitability .

For example, giving adequate attention to plant family is essential to mitigating pests and pathogens. However, many farmers have success managing rotations by planning sequencing and cover crops around desirable cash crops.



PROCEDURE:

This chapter provides a step-by-step procedure for planning crop rotations on an individual farm. The procedure is based on methods used by the panel of expert farmers ([chapter 2](#)), supplemented with other sources. It distills what experienced growers do, based on experience, knowledge, and intuition, into a systematic method. For the sake of simplicity, the instructions are written as if the person doing the planning is the manager of the farm.

“The rewards of systematic crop rotation planning increase, however, with the number of crops and the complexity of the fields.”

The crop rotation planning procedure works through a series of steps. You will

- (1) organize your information
- (2) develop a general rotation plan
- (3) construct a crop rotation planning map
- (4) plan future crop sequences for each section of the farm
- (5) refine your crop sequence plan.

The procedure is *easiest* for a farm that produces only a few crops and has uniform field conditions, but it is *most useful* for farms with complex operations. Examples of farms with relatively simple rotation problems include most grain farms and some wholesale vegetable operations, where all of the crops can be grown on all of the fields. The procedure can be used to plan rotations with more crops and multiple soil types, but the process is time-consuming. The rewards of systematic crop rotation planning increase, however, with the number of crops and the complexity of the fields. On farms that grow only a few crops, reasonable rotations can be maintained using a few rules of thumb. With a complex operation, however, a long-term problem can develop without the farmer realizing that the rotation practices are suboptimal. Although the planning procedure described below is divided into many steps, it is not complicated. Simply proceed one step at a time, and you will end up with a plan. Besides helping you develop a plan, working through the procedure will likely give you new insights into your farm and how you manage it. It can also serve as a new baseline and record system for your farm.

“Expert growers simplify their planning by building their rotations around short sequences of two or three crops or cover crops.”

The crop rotation planning process becomes more complex if the crop mix is highly diverse, if you plant the same crop multiple times each season, if you double or triple crop fields, or if the fields vary in their ability to grow various crops. For farms that require a complex cropping plan, using Microsoft Excel spreadsheets instead of paper worktables is advised. These can be downloaded at the links below. The files contain a modified version of this chapter in which the instructions are adapted to worksheets rather than paper tables. For any farm, the computer worksheets will simplify data entry and sorting.

Supplements

- CROP ROTATION PLANNING PROCEDURE
- CROP CHARACTER
- FIELD CHARACTER
- ACERS OF FIELD
- FIELD MAP

The procedure described here is not a cookbook recipe. It will not tell you which crop should follow another—for example, to precede a crop with hairy vetch or follow it with potato.

Rather, the procedure will help you organize diverse data on the management and biology of the crops you want to grow to define rotations that work for your particular farm. You need to know your fields and your crop mix to use this planner. Only you know the particular goals, problems, and opportunities of your farm operation. The procedure can help you recognize the critical decisions that need to be made, however, and prompt you to make them in a logical order.

The worksheets will help you enter, compare, and sort the information you need to plan a good crop rotation, for each field and for the entire farm.

There are three main types of crop rotation depending on the crop being planted or rotated; these include:

- Annual rotation rotation.
- Biennial rotation.
- Three-year rotation

CROPPING PATTERN:

Cropping pattern refers to the proportion of land under cultivation of different crops at different points of time. This indicates the time and arrangement of crops in a particular land area. Any change in the cropping pattern would cause:

- change in the proportion of land under different crops
- change in space sequence and time of crops

In India, the cropping pattern is determined by rainfall, temperature, climate, technology and soil type.

In order to obtain maximum yields, different patterns of cropping are practised. The major cropping patterns include the following:

MONOCROPPING:

Monocropping reduces soil fertility and destroys the structure of the soil. Chemical fertilizers are required to upgrade production. This practice allows the spread of pests and diseases.

MIXED CROPPING:

When two or more crops are grown on the same land simultaneously, it is known as mixed cropping. For eg., growing wheat and gram on the same land at the same time is mixed cropping. This practice minimizes the risk of failure of one of the crops and insures against crop failure due to abnormal weather condition

The crops to be grown together should have a different maturation time and different water requirements. One tall and one dwarf crop should be grown together. The nutrients required by one crop should be less than those required by the other. One crop should have deep roots, other's should be shallow. All these criteria lead to a successful mixed cropping pattern

INTER CROPPING:

Intercropping is the practice of growing more than one crop on the same field at the same time in a definite row pattern. After one row of the main crop, three rows of intercrops can be grown. This increases productivity per unit area.

Intercropping can be of different types:

ROW INTERCROPPING:

When the component crops are arranged in alternate rows it is known as row intercropping. It helps in optimum utilization of land space and suppression of weeds during the early stages of the main crop.

STRIP INTERCROPPING:

When two or more crops are grown in wide strips so that the two crops can be managed separately, it is known as strip cropping. However, the crops are close enough to interact

ADVANTAGES OF MIXED CROPPING:

- The crop yield increases.
- The pest infestation is minimized.
- Reduction in the risk of crop failure.
- The soil is utilized properly.
- More than one variety of crops can be harvested at the same time.

ADVANTAGES OF INTER CROPPING:

- The fertility of the soil is maintained.
- The spread of diseases and pests is controlled.
- Optimum utilization of resources.
- The space and time of growing more than one crop are saved.
- Maximum utilization of nutrients present in the soil.

Maize and soybean, bajra and lobea are some of the crops grown as intercrops.

In this pattern, different crops are grown on the same land in preplanned succession. The crops are classified as one-year rotation, two-year rotation, and three-year rotation, depending upon their duration.

Legumes are included in the crop rotation programme to increase soil fertility. The crops which require high fertility level (wheat) can be grown after the legumes. The crops which require low inputs can be grown after the crops that require high inputs.

HOW ARE THE CROPS SELECTED FOR CROP ROTATION:

While selecting the crops for rotation, the following criteria should be adopted:

- Enough moisture should be available.
- Availability of fertilizers, man-power, and machine-power.
- Marketing and processing facilities.
- Availability of nutrients in the soil.
- The crop duration- short or long.

ADVANTAGES OF CROP ROTATION

- The soil fertility is maintained for a prolonged period.
- The growth of weeds and pests is prevented.
- A lot of chemical fertilizers are not required.
- The physical and chemical nature of the soil remains unaltered.

FACTORS AFFECTING CROP PATTERNS

The cropping patterns determine the level of agricultural production. This reflects the agricultural economy of any region.

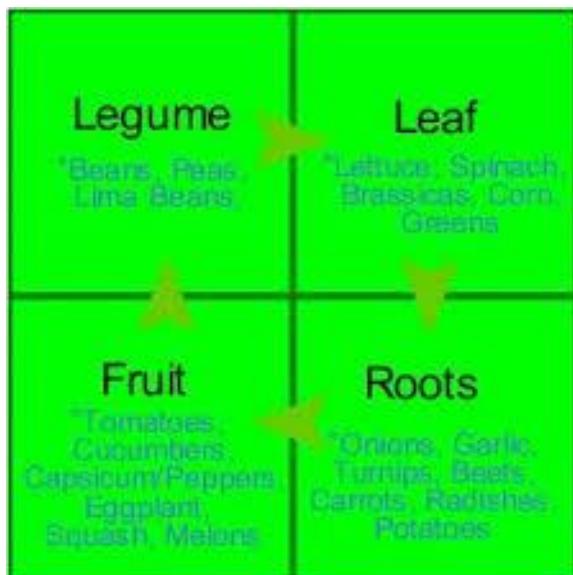
The cropping patterns are affected by changes in agrarian policy, availability of agricultural inputs, improvement in technology.

Thus, the cropping patterns are beneficial in improving the fertility of the soil, thereby, increasing the yield of the crops. It ensures crop protection and availability of nutrients to the crops.

Cropping sequence should be determined based on susceptibility to insect pests. Succeeding crops should have different growth habits and be host to a different set of pests. The primary goal in managing insects through crop rotation is to interfere with the needs of the pest throughout its life cycle. It is therefore important to be familiar with insect life

- Crop rotation practices such as manuring, composting, cover cropping, green manuring and short pasturing cycles improve soil quality by maintaining or increasing soil organic matter content. Organic matter serves as the primary food source for soil microorganisms. These organisms provide many benefits, including holding the soil particles together, releasing

minerals for plant uptake, enhancing the downward movement of water and air, and providing pathways for root growth. Rotations including crops with a variety of rooting depths make use of water and nutrients throughout the soil, aid in loosening compacted soil and increase topsoil over time.



But the farmers also use the other rotating systems, with wheat being the most common “other” crop included in rotations with corn and soy beans

While 82 to 94 percent of most of crops are grown in some sort of rotation, conversion, crop rotations that incorporate cover crops remaining rate

This are the main methods used during the crop rotation



ACTIVITY LOG FOR THE FIRST WEEK

Day & Date	Brief description of the daily activity	Learning outcomes
Day – 1	I met Mr.J.B.P.chowdary and Mr.P.Mariadasu and I surveyed them.	I learnt about the types of rotation methods used for farming
Day - 2	I studied about the microaggregation and the uses of it in the farming	I learnt the positive outcomes of organic farming
Day – 3	I studied about the crop interrelationships can be found in the each crop	Learnt about the soil organic matter content required for the soil
Day – 4	I enquired on the pest management techniques used by the farmers to increase their yeild	Learnt about increasing the availability of nitrogen in soil
Day – 5	I studied on the character of farm and the type of soil	I learnt that crop should be selected based on the type of soil we have
Day –6	I enquired farmers on the types of problems faced during the rotation of crops like grains and vegetables	I learnt the systematic crop rotation planning procedure

WEEKLY REPORT

WEEK – 1 (From Dt:18/10/22to Dt:24/10/22)

Objective of the Activity Done:About the types of farming

Detailed Report: The procedure of crop rotation

Many crops which are critical for the market, like vegetables are row crops (that is, grown in tight rows).

While often the most profitable for farmers, these crops are more taxing on the soil.¹

Row crops typically have low biomass and shallow roots: this means the plant contributes low residue to the surrounding soil and has limited effects on structure.¹ With much of the soil around the plant exposed to disruption by rainfall and traffic,

In addition, legumes have heavy tap roots that burrow deep into the ground, lifting soil for better tilth and absorption of water

Cereal and grasses are frequent cover crops because of the many advantages they supply to soil quality and structure.

The dense and far-reaching root systems give ample structure to surrounding soil and provide significant biomass for organic farming

There are numerous factors that must be taken into consideration when planning a crop rotation. There is no limit to the number of crops that can be used in a rotation, or the amount of time a rotation takes to complete. Decisions about rotations are made years prior, seasons prior, or even at the last minute when an opportunity to increase profits or soil quality presents itself.

As an additional benefit, the cattle, sheep and/or goat provide milk and can act as a cash crop in the times of economic hardship.

In addition to lowering the need for inputs (by controlling for pests and weeds and increasing available nutrients), crop rotation helps organic growers increase the amount of biodiversity their farms.

fields with row crops experience faster break down of organic matter by microbes, leaving fewer nutrients for future plants

ACTIVITY LOG FOR THE SECOND WEEK

Day & Date	Brief description of the daily activity	Learning Outcome
Day – 1	I interacted with both farmers Kondayya and Koteswararao	I learned the concept of crop rotation
Day - 2	I Visited integrated agrilab in Tenali market yard	I learnt about soil fertility
Day – 3	I analyze how expert organic farmers manage crop rotation	Basics of crop rotation and farm management.
Day – 4	I analyze basic crop rotation.	Managing crop rotation system.
Day – 5	I studied on physical and biological processes in crop production	Crop rotation effects on soil fertility & plant nutrition
Day –6	I enquire about crop sequence from expert formers fields.	Managing plant diseases with crop rotation.

WEEKLY REPORT

WEEK – 2 (From Dt:25/10/22 to Dt:7/11/22)

Objective of the Activity Done: crop rotation testing methodsand different kinds of Equipment
Detailed Report: I had gain some knowledge about crop rotation
I analyze how expert organic formers manage crop rotation
I studied on physical and biological process in crop rotation
I enquire about crop sequence from expert farmer fields
I understand the concept of soil fertility
I learnt basics of crop rotation and farm management
I met farmers
I gained the information how crop rotation effects on soil fertility and Plant nutrition

ACTIVITY LOG FOR THE THIRD WEEK

Day & Date	Brief description of the daily activity	Learning Outcome
Day – 1	I Interact With Peoples Suresh kumar.Aand T.Srinivas rao Purpose Of Crop Rotation	I Learnt About crop Rotation
Day - 2	I Interacted With A Seed Seller In Tenali.	Types Of Seeds
Day – 3	I Visited A Pesticides Store In Morris Peta	I Learnt About Seasonal Pest Controlling Method
Day – 4	I Enquire On Crop Sequence Problems And Opporunity	Crop Rotation Planning Procedure
Day – 5	I Analyzed On How To Reduce Pests	Pest Reduction Method
Day –6	I Analyzed On Farming Labours Required For Farming	We Finally Concluded That Man Power Is Less And Thus The Yield Is Reduce

WEEKLY REPORT

WEEK – 3 (From Dt_1-11-22 to Dt_7-11-22)

Objective of the Activity Done: crop rotation methods and difference in soils in the fields.

Detailed Report: I had gained some knowledge about the types of seeds. I learned

About crop rotation Most farmers are advised to practice crop rotation when the land becomes still and does not produce as much as it should, further demonstrating the advantage of crop rotation.

Notably, the practice has been seen to be successful in increasing the fertility of the land over a period of time.

Crop rotation practices such as manuring, composting, cover cropping, green manuring and short pasturing cycles improve soil quality by maintaining or increasing soil organic matter content.

Composting can be defined as the decomposition of organic matter into a humus-like substance and minerals by the action of microorganisms under aerobic conditions, combined with chemical and physical reactions.

Composting is predominantly an aerobic or oxygen-requiring process in which microorganisms consume oxygen while feeding on organic matter.

In doing so they produce carbon dioxide, water, heat, and miscellaneous gaseous byproducts to create compost .

Composting stabilizes the nutrient content of manure and other organic materials and releases nutrients slowly, minimizing nutrient loss and potential environmental contamination

Organic matter serves as the primary food source for soil microorganisms.

It also increases and improves the soil organic matter caused by the micro-organisms left behind by each type of crop planted

Crop rotation helps prevent soil compaction, thus improving the physical condition of the soil.

Crop rotation improves the soil structure as well as the soil texture.

This allows for good conditions for seed germination and root proliferation.

It also helps with other soil processes such as water infiltration and aeration, which have a lot of benefits for the crops and improve the composition of the soil.

However, it all depends on the type of crops being rotated, such as cover crops that reduce the spread of weeds, thereby reducing tillage that damages the soil structure.

ACTIVITY LOG FOR THE FOURTH WEEK

Day & Date	Brief description of the daily activity	Learning Outcome
Day – 1	I surveyed Mr.A.ramgopal And I surveyed Mr.T.surendra babu	I learnt about the crop rotation methods ,How crops are developed In different regions,
Day - 2	I visited an organic fertilizer centre	I learnt about role of compost In increasing soil fertility
Day – 3	I analysed on compost used By the former during Rotation of crops	The requirements of organic compost are cow dung, earthworms, Vegetables
Day – 4	I analysed on effects of climate conditions in crop rotation	I concluded that cyclones causes Damage to the crop
Day – 5	I enquired on which crops are best grown in Crop rotation method in different areas	Corn is the best grown crop In Crop rotation method
Day –6	I analysed on types of soils available in Kuchipudi village	Black soil is mostly found in Kuchipudi

WEEKLY REPORT

WEEK -4 (From Dt :8-11-22 to Dt: 14-11-22)

Objective of the Activity Done: crop rotation and role of compost in increasing in soil fertility.

Detailed Report : I had gained some knowledge about crop rotation. I learnt about crop rotation methods and equipments

Crop rotation is the practice of growing a variety of crops in the same area over a number of growing seasons.

if a farmer plants the same crop in the same spot every year, as is common in conventional farming, the same nutrients are drawn out of the soil year after year.

I visited in Kuchipudi farms .There I observed about various types of crops and how crop is growing

Criteria for Selection of Crops for Rotation:

1. There should be enough moisture.
2. Fertilizer, labour, and machine power are all available.
3. Marketing and processing facilities.
4. Nutrient availability in the soil.
5. The crop's duration—short or long.

Advantages of Crop rotation

1. improved soil fertility and structure Improved soil fertility and structure
2. Disease control
3. Weed control
4. Reduced commercial risk

Crop rotation is one of the very basic building blocks of organic farming systems. The crop rotation in organic farming must provide the soil fertility required for maintaining productivity and it must prevent problems with weeds, pests and diseases.

This is obtained through a proper sequence of crops in time and space and through the use of N₂fixing crops

The size of farm effects the crop rotation. Small land holding is major problem in Pakistan that's why crop rotation is effected by the farm size

The crop rotation is very important in the Agriculture. Crop rotation done according to the principle of crop rotation it can help full in maintain the soil fertility.

ACTIVITY LOG FOR THE FIFTH WEEK

Day & Date	Brief description of the daily activity	Learning Outcome
Day – 1	I interacted with Mr.Raghu Babu and quosined him about damages to the crop and I interacted with Mr.AppaRao and enquired about soil properties	The soil properties decreases after getting yield. we can increase them by using composts
Day - 2	I interacted with Mr.Murali Krishna and questioned about balanced yield and effect of climate change on crops	Corn crop gives more yield than paddy and harvesting is difficult due to climate change
Day – 3	I studied on soil minerals and plant nutrition	All plants require 17 elements to complete their life cycle
Day – 4	I studied on advantages and disadvantages of crop rotation	Increase soil nutrition, crop yield, reduce stress of weeds pollution. Limits the concentration of pests and diseases
Day – 5	I enquire on water facility and irrigation methods	I haven't found any problems on water facility in Kuchipudi
Day –6	I analyzed on methods of cropping	Found that rotationalcropping is mostly used to get balanced yield

WEEKLY REPORT

WEEK – 5 (From Dt:15/11/22 to Dt:21/11/22)

Objective of the Activity Done: Advantages and Disadvantages of crop rotation
Detailed Report: Crop rotation increases soil fertility and get better nitrogen usage, improve soil structure
It prevents Soil Erosion and increases Crop yields
we learnt management of insect pests with crop rotation and field layout
weed control is inherently more difficult in some crops than others
soil topography is prohibited from taking and growing more than one crop in a particular area
Crop rotation is not always advisable
Changing weather conditions and other accidents interfere with crop rotation
The type of soil may generally be suitable only for certain crops
Improper Implementation causes more harm than good
Necessitates more skills and knowledge of the subject
Crop rotation is an important strategy for managing some diseases, weeds, and insect pests of vegetable crops
rotational crops also provide nutritional benefits
Limits the concentration of pests and diseases, Reduces the stress of weeds
Soil is a major source of nutrients needed by plants for growth. The three main Nutrients are nitrogen(N), phosphorous(P) and potassium(K).
Soil provides structural stability for plants and retains relinquishes water and the nutrients necessary for plant growth
To increase the crop yield agrarians are recommended to sow only certified seeds that have passed all the necessary quality controls
Climate conditions have a predominant influence on the development of plants and, consequently, on yields
When different species of plants are cultivated on the same field, there is a definite distance between crops of the same species.
So, it is efficient in attracting pests away from their target host plant
Intercropping is the best way to avoid pests

ACTIVITY LOG FOR THE SIXTH WEEK

Day & Date	Brief description of the daily activity	Learning Outcome
Day – 1	I Analyzed on Survey Forms Collected from Farmers and Noticed Some Problem.	I Noted Some Problem Faced by The Farmers.
Day - 2	I Visited the Fields of Respected Farmers on Survey.	I Learnt About the Method of Cropping.
Day – 3	I Conducted Awareness Program For The Farmers on Modern Ways Of Farming.	Robots And Drones Are in Crop Rotation Method.
Day – 4	I Conducted Awareness Program in high School.	Interaction With School Kids and Analysis About Their Knowledge On Crop Rotation.
Day – 5	I Conducted Awareness Program in The Fields with Farmers	I Noted Feedback Given by The Farmers
Day –6	I Conducted Awareness Program In Chebrolu Engineering College.	Awareness Program Is Performed In Chebrolu College.

WEEKLY REPORT

WEEK – 6 (From Dt 22-11-22to Dt 28-11-22)

Objective of the Activity Done: Awareness Program at Our Community

Detailed Report: I Created Recorded by The Village Farmers.

I Conducted Awareness Program in Kuchipudi Village. Then I Gave Awareness About Crop Rotation Images.

I Conducted an Awareness Program in Sky School In Kuchipudi. Then I Gave Awareness About Crop Rotation Effect and Causes.

I Conducted Awareness Program in chebrolu Engineering College. There I Gave Awareness About

Various Types of Crop Rotation.

I Conducted Awareness Program in Tenali, Morris Peta. Then I Gave Awareness About Crop Rotation

I Visited a Pesticides Store in Tenali Market Yard. I Learnt About Seasonal Pest Controlling Method.

Crop Rotation and Fields Images. It Has Gave Me Technical Observation on Our Communities Knowledge.

On Their Crop Rotation and Benefits and Causes.

CHAPTER 5: OUTCOMES DESCRIPTION



CHEBROLU ENGINEERING COLLEGE

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Guntur, Andhra Pradesh

2021-2025

CROP ROTATION SURVEY FORM

1. Address of the family

NAME : A. Ramgopal

AGE : 45

HOUSE NO :

MANDAL :

MALE/FEMALE : MALE

SURVEY QUESTIONS:

1. What crops are best grown in crop rotation method?

A. Padd, corn, green gram

2. Does water level effect crop rotation?

A. NO, we have sufficient crop

3. Does past diseases effect the present crop?

A. NO, we use fertilizers

4. What is the effect of climate change on crop?

A. sudden changes damages crop

5. What causes most damage to the crop?

A. cyclones

6. Can pests be controlled by crop rotation?

A. Yes

7. Which crop gives the more yield?

A. corn

8. Which gives more yield sole cropping or rotational cropping?

A. Rotational cropping

9. Does crop rotation method increase the soil properties?

A. Yes

10. Will you get balanced yield by using this method?

A. Depends on crop

Place: Kuchipudi

Date:

Signature of the Student

B. Veda keerthi

A. Ramgopal

Signature of the Mentor





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2021-2025

CROP ROTATION SURVEY FORM

1. Address of the family

NAME : R. Rama koteswara Rao

AGE : 72

HOUSE NO :

MANDAL :

MALE/FEMALE : MALE

SURVEY QUESTIONS:

1. What crops are best grown in crop rotation method?

A. Paddy, corn, Black and green gram

2. Does water level effect crop rotation?

A. NO

3. Does past diseases effect the present crop?

A. NO

4. What is the effect of climate change on crop?

A. Yes, effects

5. What causes most damage to the crop?

A. NO man power, more money cost

6. Can pests be controlled by crop rotation?

A. NO, it cannot

7. Which crop gives the more yield?

A. Black gram and corn

8. Which gives more yield sole cropping or rotational cropping?

A. Rotational cropping

9. Does crop rotation method increase the soil properties?

A. increases

10. Will you get balanced yield by using this method?

A. Depends on crop

Place: Kuchipudi

Date:

Signature of the Student

R. Rama koteswara Rao

Signature of the Mentor

B. Veda Keerthi





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2021-2025

CROP ROTATION SURVEY FORM

1. Address of the family

NAME : A.V.Suresh Kumar

AGE : 41

HOUSE NO : 9-15

MANDAL :

MALE/FEMALE : Male

SURVEY QUESTIONS:

1. What crops are best grown in crop rotation method?

A. Paddy, CORN

2. Does water level effect crop rotation?

A. No

3. Does past diseases effect the present crop?

A. No, climate based

4. What is the effect of climate change on crop?

A. climatic rains

5. What causes most damage to the crop?

A. climate changes

6. Can pests be controlled by crop rotation?

A. No

7. Which crop gives the more yield?

A. CORN

8. Which gives more yield sole cropping or rotational cropping?

A. Rotational cropping

9. Does crop rotation method increase the soil properties?

A. Yes

10. Will you get balanced yield by using this method?

A. Balanced

Place: Kuchipudi

Date:

Signature of the Student

B.Veda Keerthi

Signature of the Mentor

J.V.S. Srinivas.





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2021-2025

CROP ROTATION SURVEY FORM

1. Address of the family

NAME : Y. Raghu babu

AGE : 43

HOUSE NO : 6-65

MANDAL :

MALE/FEMALE : MALE

SURVEY QUESTIONS:

1. What crops are best grown in crop rotation method?

A. Paddy, corn

2. Does water level effect crop rotation?

A. No effect

3. Does past diseases effect the present crop?

A. No

4. What is the effect of climate change on crop?

A. Crop yield is difficult

5. What causes most damage to the crop?

A. Cyclones

6. Can pests be controlled by crop rotation?

A. No

7. Which crop gives the more yield?

A. Corn

8. Which gives more yield sole cropping or rotational cropping?

A. Rotational cropping

9. Does crop rotation method increase the soil properties?

A. Yes, it increases

10. Will you get balanced yield by using this method?

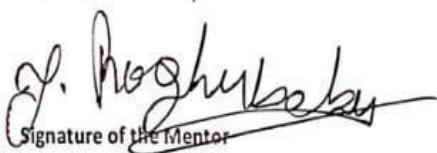
A. Changes depends on crop

Place: Kuchipudi

Date:

Signature of the Student

B. Veda Keerthi


Signature of the Mentor





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2021-2025

CROP ROTATION SURVEY FORM

1. Address of the family

NAME : k APPAYAO

AGE : 82

HOUSE NO :

MANDAL :

MALE/FEMALE : MALE

SURVEY QUESTIONS:

1. What crops are best grown in crop rotation method?

A. Paddy, corn

2. Does water level effect crop rotation?

A. No

3. Does past diseases effect the present crop?

A. No

4. What is the effect of climate change on crop?

A. Yes, it effects

5. What causes most damage to the crop?

A. cyclones

6. Can pests be controlled by crop rotation?

A. No

7. Which crop gives the more yield?

A. CORN

8. Which gives more yield sole cropping or rotational cropping?

A. Rotational cropping

9. Does crop rotation method increase the soil properties?

A. They gives own benefits if we use fertilizers

10. Will you get balanced yield by using this method?

A. changes based on crop

Place: Kuchipudi

Date:

Signature of the Student

B. Veda Keerthi

11/10/2022
Signature of the Mentor





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2021-2025

CROP ROTATION SURVEY FORM

1. Address of the family

NAME : P. Mariadasu

AGE : 44

HOUSE NO :

MANDAL :

MALE/FEMALE : MALE

SURVEY QUESTIONS:

1. What crops are best grown in crop rotation method?

A. Paddy, corn

2. Does water level effect crop rotation?

A. No because there is canal and point

3. Does past diseases effect the present crop?

A. Yes

4. What is the effect of climate change on crop?

A. Crop gets diseases

5. What causes most damage to the crop?

A. Pest in corn crop

6. Can pests be controlled by crop rotation?

A. Yes

7. Which crop gives the more yield?

A. Paddy

8. Which gives more yield sole cropping or rotational cropping?

A. Rotational cropping

9. Does crop rotation method increase the soil properties?

A. Decreases

10. Will you get balanced yield by using this method?

A. No, it changes

Place: Kuchipudi



Date:

Signature of the Student

B. Veda Keerthi

Signature of the Mentor





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2021-2025

CROP ROTATION SURVEY FORM

1. Address of the family

NAME : T. Srinivas Rao

AGE : 60

HOUSE NO :

MANDAL :

MALE/FEMALE : MALE

SURVEY QUESTIONS:

1. What crops are best grown in crop rotation method?

A. Paddy, Corn

2. Does water level effect crop rotation?

A. No, effect to crop

3. Does past diseases effect the present crop?

A. Yes, sometimes

4. What is the effect of climate change on crop?

A. Climate changes effects crop

5. What causes most damage to the crop?

A. Climate change

6. Can pests be controlled by crop rotation?

A. Yes, decreases

7. Which crop gives the more yield?

A. Corn

8. Which gives more yield sole cropping or rotational cropping?

A. Rotational cropping

9. Does crop rotation method increase the soil properties?

A. Decreases, we use compost

10. Will you get balanced yield by using this method?

A. No, not balanced

Place: Kuchipudi

Date:

Signature of the Student

B. Veda Keerthi

Signature of the Mentor



GPS Map Camera

Google



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2021-2025

CROP ROTATION SURVEY FORM

1. Address of the family

NAME : A. Murali Krishna

AGE : 59

HOUSE NO : 8-69

MANDAL :

MALE/FEMALE : MALE

SURVEY QUESTIONS:

1. What crops are best grown in crop rotation method?

A. Paddy, CORN

2. Does water level effect crop rotation?

A. NO

3. Does past diseases effect the present crop?

A. NO

4. What is the effect of climate change on crop?

A. Harvesting is difficult

5. What causes most damage to the crop?

A. cyclones damages yield

6. Can pests be controlled by crop rotation?

A. NO, it cant

7. Which crop gives the more yield?

A. CORN

8. Which gives more yield sole cropping or rotational cropping?

A. Rotational Cropping

9. Does crop rotation method increase the soil properties?

A. NO it does not

10. Will you get balanced yield by using this method?

A. NO it is different for different crops

Place: kuchipudi

Date:

A. M. Krishna

Signature of the Student

Signature of the Mentor

B.Veda keerthi





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2021-2025

CROP ROTATION SURVEY FORM

1. Address of the family

NAME : D. Kondayya

AGE : 72

HOUSE NO. :

MANDAL : Amruthalur

MALE/FEMALE : MALE

SURVEY QUESTIONS:

1. What crops are best grown in crop rotation method?

A. Paddy, Corn

2. Does water level effect crop rotation?

A. No

3. Does past diseases effect the present crop?

A. No

4. What is the effect of climate change on crop?

A. Yes

5. What causes most damage to the crop?

A. Labour cost is very high, we can't afford them

6. Can pests be controlled by crop rotation?

A. No

7. Which crop gives the more yield?

A. Corn

8. Which gives more yield sole cropping or rotational cropping?

A. Rotational Cropping

9. Does crop rotation method increase the soil properties?

A. No

10. Will you get balanced yield by using this method?

A. No, Corn gives more profit than paddy.

Place: Kuchipudi

Date:

Signature of the Student

Signature of the Mentor



Kuchipudi, Andhra Pradesh, India

5MJ5+MW9, Chinaparimi - Kuchipudi Lock Rd,

Kuchipudi, Andhra Pradesh 522313, India

Lat 16.181874°

Long 80.660961°

15/11/22 01:47 PM GMT +05:30



Google



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2021-2025

CROP ROTATION SURVEY FORM

1. Address of the family

NAME : T. Suresh Babu

AGE : 42

HOUSE NO :

MANDAL : Ammathalur

MALE/FEMALE : MALE

SURVEY QUESTIONS:

1. What crops are best grown in crop rotation method?

A. Paddy, Corn

2. Does water level effect crop rotation?

A. Yes

3. Does past diseases effect the present crop?

A. Yes

4. What is the effect of climate change on crop?

A. Cyclones causes damage to crop.

5. What causes most damage to the crop?

A. Cyclones, climate changes

6. Can pests be controlled by crop rotation?

A. Yes

7. Which crop gives the more yield?

A. Equal yield

8. Which gives more yield sole cropping or rotational cropping?

A. rotational

9. Does crop rotation method increase the soil properties?

A. No changes in soil

10. Will you get balanced yield by using this method?

A. Yes, Balanced Yield

Place: Kuchipudi

Date:

Signature of the Student

Signature of the Mentor

T. Suresh Babu



 GPS Map Camera

Kuchipudi, Andhra Pradesh, India

5MJ5+MW9, Chinaparimi - Kuchipudi Lock Rd,

Kuchipudi, Andhra Pradesh 522313, India

Lat 16.181793°

Long 80.661201°

08/11/22 01:45 PM GMT +05:30

Google



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Guntur, Andhra Pradesh

2021-2025

CROP ROTATION SURVEY FORM

1. Address of the family

NAME : J. Basava punnath chowdary
AGE : 45
HOUSE NO : 8-68
MANDAL :
MALE/FEMALE : MALE

SURVEY QUESTIONS:

1. What crops are best grown in crop rotation method?

A. Paddy, Black gram, green gram

2. Does water level effect crop rotation?

A. NO

3. Does past diseases effect the present crop?

A. Yes, there is

4. What is the effect of climate change on crop?

A. No effect

5. What causes most damage to the crop?

A. NO

6. Can pests be controlled by crop rotation?

A. No cannot control

7. Which crop gives the more yield?

A. Majorie crop

8. Which gives more yield sole cropping or rotational cropping?

A. Rotational method

9. Does crop rotation method increase the soil properties?

A. Yes

10. Will you get balanced yield by using this method?

A. Not balanced

Place: Kuchipudi

Date:

Signature of the Student

B. Veda Keerthi

J. BP. Chowdary
Signature of the Mentor



FINAL REPORT :



We met the agricultural officer at the “Integrated Agri lab” in Tenali market yard and shown them the survey and the documents and reports we prepared in the topic regarding crop rotation

They analyzed our survey and signed it.

DISADVANTAGES OF CROP ROTATION :

- Soil topography is prohibited from taking and growing more than one crop in a particular area
- Crop rotation is not always advisable
- Changing weather conditions and other interfere with crop rotation
- The type of soil may generally be suitable only for certain crops
- Improper implementation causes more harm than good
- Necessitates more skills and knowledge of the subject

ADVANTAGES OF CROP ROTATION

- Increases Soil Fertility.
- Increases Crop Yield.
- Increases Soil Nutrients.
- Reduces Soil Erosion.
- Limits the Concentration of Pests and Diseases.
- Reduces the Stress of Weeds.
- Improves the Soil Structure.
- Reduces Pollution.

**Report of the mini-project work done in the related subject w.r.t the
habitation/village.**

MINI PROJECT:

Awareness in the villagers:

As the mini project related to the crop rotation I have done some awareness program in the village of Kuchipudi.

We went to the houses of farmers and asked them to tell the problems faced by them during the time of cropping or harvesting and also asked them the fertilizers and pesticides used by them

And also told them about the new technology that can bring the drastic changes into their farming and encouraged them to use this type of methods



Awareness in the school:

We also conducted the awareness program in the Sri Koganti vari high school to the students

We told them about the modern ways of farming and the importance of farming and told them the importance of organic farming and its uses

The use of compost and fertilizers gathered naturally are very much important for the plant growth

The students were very much interested regarding the new ways of farming and crop rotational methods and the use of the organic farming in the future generations.



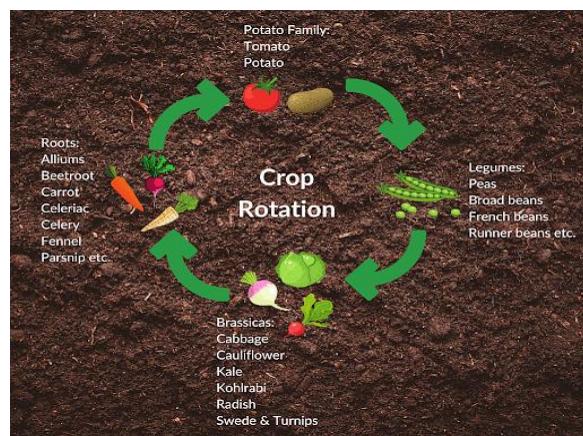
Certificate from Official of the Community

This is to certify that Bandreddy Veda Keerthi (Name of the Community Service Volunteer) Reg. No 01HUIA6212 of chelrolu engineering college (Name of the College) underwent community service in Crop Rotation (Name of the Community) from 18/10/22 to 29/11/22. The overall performance of the Community Service Volunteer during his/her community service is found to be _____ (Satisfactory/Good).

Devi
Head Master,
S.M.V. HIGH SCHOOL,
KUCHIPUDI - 522 313
Authorized Signatory with Date and Seal
Anuradha (Mandali)
Bapatla - 522 313, A.P.

CHAPTER 6: RECOMMENDATIONS AND CONCLUSIONS OF THE PROJECT

In agricultural practice, the use of crop rotation is an essential strategy that improves nutrient availability, phytosanitary conditions, soil composition and helps to counter biodiversity loss.



Crop rotation helps return nutrients to the soil without synthetic inputs. The practice also works to interrupt pest and disease cycles, improve soil health by increasing biomass from different crops' root structures, and increase biodiversity on the farm.

Economic diversity can be enhanced by both crop rotations and the diverse products that come from the farm. If value-added activities on the farm or in the local community can make effective use of available labour when field operations are less intense, this strategy can increase farm income and return to investment.

Crop rotations and diversity of products open new economic opportunities for on-farm sale or cooperation with neighbours in other direct sale options. A diverse farm is also attractive to visitors for educational programs, farm stays, hunting, and other creative ways to add value to the rural landscape and its natural resources.

The most common models used to simulate crop rotations are DSSAT, EPIC, APSIM, Cropsey's, STICS, SALUS, and root zone water quality model. Each of these models can simulate crop rotations, soil, water and nutrient dynamics, and management strategies over multiple years.

The benefits of rotations have been simulated and tested for a corn-soybean rotation in comparison with continuous corn in the US using the RZWQM reproducing the higher corn yield under corn-soybean rotation than under continuous corn

The best method of weed control is optimizing crop growth to reduce niches for weeds to develop. Crop rotation helps suppress weeds by using crops that outcompete weeds for water, nutrients or sunlight. Some crops, such as rye or sorghum, release chemicals while growing or decomposing that prevent the seed germination and growth of other nearby plants; this is called allelopathy. The use of cover crops during non-production periods can decrease weed pressure by allelopathy or competition and, when killed and left as a mulch, cover crops can suppress weeds by shading the soil surface.

Rotation strategies:

- Rotate by plant family.
- Rotate by plant part harvested.
- Rotate by plant compatibility.
- Rotate by nutrient requirements
- Rotate by rooting depth and type.
- Include legumes and cover crops.

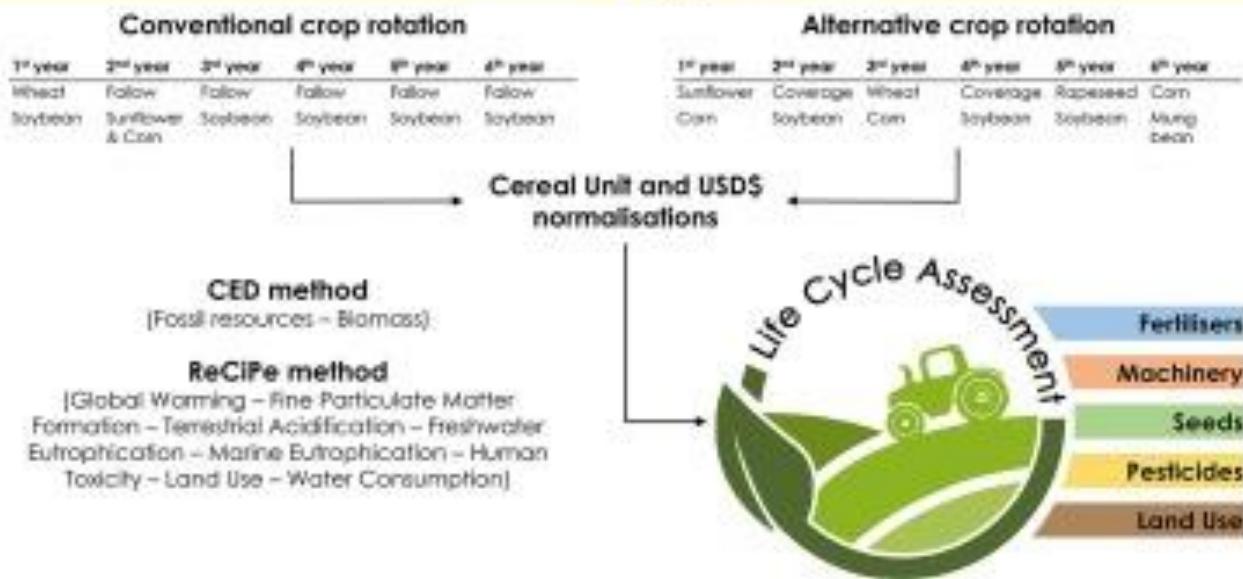
COVER CROPS:

Cover crops are also an important component of a crop rotation plan and should be utilized when fields are not being used for production. Cover crops and green manures are those crops grown specifically for the benefits they provide. They may be incorporated into the soil or left as a residue on the soil surface. Their benefits include increased organic matter, improved soil structure, enhanced drought tolerance, increased nutrient availability for plants, protection against soil erosion, weed suppression, penetration of compacted subsoils and nutrient cycling.

Expert farmers' rotations include key cash crops, "filler" or "break" crops, and cover crops. In every season, farmers must manage production across multiple fields and beds. Variation in the acreage of each crop, variation in field characteristics

And shifting business decisions result in multiple rotations or crop sequences on most organic farms. Consequently, farmers manage numerous crop rotations on the same farm.

Environmental analysis of crop rotations through the application of the Cereal Unit approach



Crop rotation is the planned successional growth of various crops on a given plot of land. Simple crop rotations may consist of two or three crops, while complicated crop rotations may contain a dozen or more crops. Without using artificial inputs, crop rotation assists in replenishing soil nutrients. Additionally, this practice breaks the cycles of pests and diseases, boosts soil health by increasing biomass from various crops' root systems and boosts biodiversity on the farm.

Maize, in a 2-year rotation with soybean, yields 5 to 20% more than continuous maize, and no amount of fertilizer or pesticide can compensate completely for that difference. It is not well understood what causes the rotation effect, but improvements in soil physical properties.

Short rotations such as maize soybean actually result in a degradation in those same factors, yet the rotation effect still is realized. Recent information suggests that soilborne pathogens may be responsible for the yield depression seen with continuous monoculture.

Student Self-Evaluation for the Community Service Project

Student Name: Bandreddy Veda Keerthi

Registration No: 21HU1A4212

Period of CSP:

From: 18/10/22

To: 29/11/22

Date of Evaluation:

Please rate your performance in the following areas:

Rating Scale: **Letter grade of CGPA calculation to be provided**

1	Oral communication	1	2	3	4	5
2	Written communication	1	2	3	4	5
3	Proactiveness	1	2	3	4	5
4	Interaction ability with community	1	2	3	4	5
5	Positive Attitude	1	2	3	4	5
6	Self-confidence	1	2	3	4	5
7	Ability to learn	1	2	3	4	5
8	Work Plan and organization	1	2	3	4	5
9	Professionalism	1	2	3	4	5
10	Creativity	1	2	3	4	5
11	Quality of work done	1	2	3	4	5
12	Time Management	1	2	3	4	5
13	Understanding the Community	1	2	3	4	5
14	Achievement of Desired Outcomes	1	2	3	4	5
15	OVERALL PERFORMANCE	1	2	3	4	5

Date:

Signature of the Student

Evaluation by the Person in-charge in the Community / Habitation

Student Name:

Bandreddy Veda Keerthi

Registration No:

21HU1A4212

Period of CSP:

From: 18/10/22 To:29/11/22

Date of Evaluation:

Name of the Person in-charge:

Address with mobile number:

Please rate the student's performance in the following areas:

Please note that your evaluation shall be done independent of the Student's self-evaluation

Rating Scale: 1 is lowest and 5 is highest rank

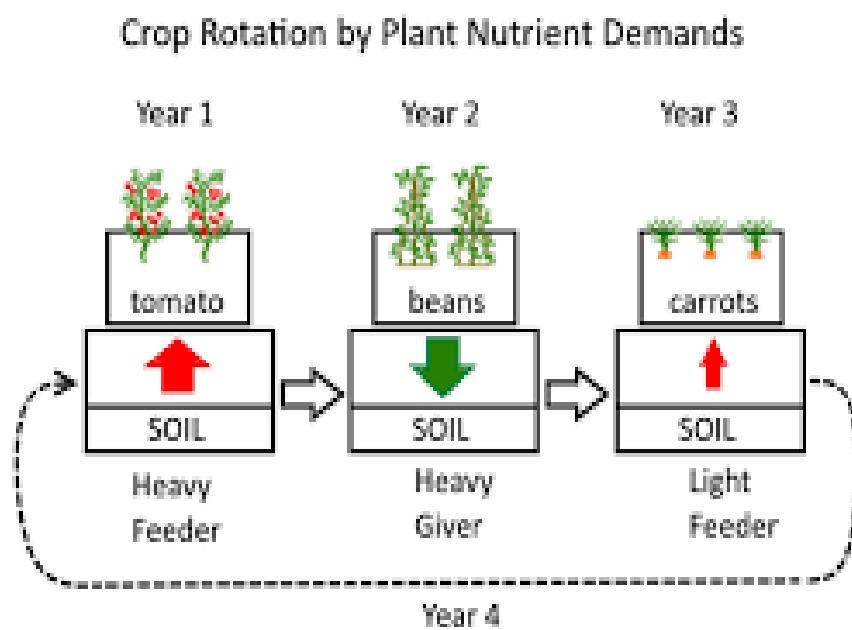
1	Oral communication	1	2	3	4	5
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3	Proactiveness	1	2	3	4	5
4	Interaction ability with community	1	2	3	4	5
5	Positive Attitude	1	2	3	4	5
6	Self-confidence	1	2	3	4	5
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13	Understanding the Community	1	2	3	4	5
14	Achievement of Desired Outcomes	1	2	3	4	5
15	OVERALL PERFORMANCE	1	2	3	4	5

Date:

Signature of the Supervisor

PHOTOS & VIDEO LINKS







YEAR 3 PLAN FOR SOIL BED

YEAR 1



MULCHED BED

GROW NIGHTSHADES

Plants such as peppers thrive under mulch, and prepare soil for year 2.

YEAR 2



TRANSITIONAL BED

GROW BRASSICAS

Brassicas like broccoli will eradicate weeds from mulching, helping for year 3.

YEAR 3



WEED FREE BED

GROW WEED SENSITIVE CROPS

Weed sensitive crops like carrots can now thrive in your well earned soil.

EVALUATION

Internal Evaluation for the Community Service Project

Objectives:

- To facilitate an understanding of the issues that confront the vulnerable / marginalized sections of society.
- To initiate team processes with the student groups for societal change.
- To provide students an opportunity to familiarize themselves with the urban / rural community they live in.
- To enable students to engage in the development of the community.
- To plan activities based on the focused groups.
- To know the ways of transforming society through systematic programme implementation.

Assessment Model:

- There shall only be internal evaluation.
- The Faculty Guide assigned is in-charge of the learning activities of the students and for the comprehensive and continuous assessment of the students.
- The assessment is to be conducted for 100 marks.
- The number of credits assigned is 4. Later the marks shall be converted into grades and grade points to include finally in the SGPA and CGPA.
- The weightings shall be:
 - Activity Log 20 marks
 - Community Service Project Implementation 30 marks
 - Mini Project Work 25 marks
 - Oral Presentation 25 marks
- Activity Log is the record of the day-to-day activities. The Activity Log is assessed on an individual basis, thus allowing for individual members within groups to be assessed this way. The assessment will take into consideration the individual student's involvement in the assigned work.
- While evaluating the student's Activity Log, the following shall be considered -
 - a. The individual student's effort and commitment.
 - b. The originality and quality of the work produced by the individual student.
 - c. The student's integration and co-operation with the work assigned.
 - d. The completeness of the Activity Log.
- The assessment for the Community Service Project implementation shall include the following components and based on Weekly Reports and

Outcomes Description

- a. Details of the Socio-Economic Survey of the village/habitation.
- b. Problems identified.
- c. Community Awareness Programs organized.
- e. Suggested Short-Term and Long-Term Action Plan.

MARKS STATEMENT
(To be used by the Examiners)

INTERNAL ASSESSMENT STATEMENT

Name Of the Student:

Programme of Study:

Year of Study:

Group:

Register No/H.T. No:

Name of the College:

University:

<i>Sl.No</i>	<i>Evaluation Criterion</i>	<i>Maximum Marks</i>	<i>Marks Awarded</i>
1.	Activity Log	20	
2.	Community Service Project Implementation	30	
3.	Mini Project Work	25	
4.	Oral Presentation	25	
	GRAND TOTAL	100	

Date:

Signature of the Faculty Guide

Certified by

Date:

Signature of the Head of the Department/Principal

Seal:

