

MANURE MAKING REPORT(II)

Submitted to



**MAHATMA GANDHI
UNIVERSITY**

**UNDER THE GUIDENCE OF
DR.ANU PAUL
ASSOCIATE PROFESSOR
BPC COLLEGE PIRAVOM**



**SUBMITTED BY:
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BCA

STUDENT DECLARATION

This is to certify that I, Krishnapriya B,
Reg.No:210021093783 of BCA programme,2021-2024 have
completed the Research Project(II) about organic farming as a part of
Massive Open Online Course (MOOC) under the guidance of “Dr Anu
Paul” in partial fulfilment of the requirement for the award of degree
of Bachelor of Computer Application .This is an original piece of work
& I have not submitted it earlier elsewhere.

Place: Kothamangalam

Signature of Student

Date:

Name of the Student

ACKNOWLEDGEMENT

In preparing and finishing this research project report, I acknowledge my heartfelt gratitude to all those who contributed to the successful completion of my MOOC project report on organic farming.

First and foremost, I would like to thank the instructors and organizers of the MOOC for providing valuable insights and comprehensive course materials that formed the foundation of this report. Lastly, I want to acknowledge the tireless efforts of my family and friends for their encouragement and understanding during the challenging periods of this project.

KRISHNAPRIYA B (BCA)

2021-2024

BASELIOS POULOSE II CATHOLICOS COLLEGE PIRAVOM

DEPARTMENT OF COMPUTER APPLICATIONS CERTIFICATE



Certified the Bonafide record of project work done by Mr./Ms. Krishnapriya B with Reg. No 210021093783 of BCA Programme,2021-2024(year of study) as a part of MOOC on Organic Farming offered by Mahatma Gandhi University, Kottayam.

Place: Piravom

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INTRODUCTION

Soil is the base of our conventional way of farming and if the soil is weak, plants cannot use the inputs effectively. The use of chemical fertilizer is increasing day-by day for the sake of increasing production. By excess use of it, the fertility of soil and health also deteriorate. Therefore, the use of organic manure is one of the alternative ways for enhancing production and improves the soil health. It is not only cheaper; easily available ensures sustainable agriculture too.

Organic manures are natural products used by farmers to enhanced sustainable crop production. Organic manure is nutrient derived from organic sources like animal waste, vegetable compost, agricultural residues, human excreta, etc. Basically, they are natural materials that decay and get mixed with the soil thereby increasing its fertility. The main idea behind providing organic manure is to break down the complex inorganic nutritional supplements into simpler organic ones that can be easily absorbed and assimilated by the plants. Manures having a low nutrient content have residual effect for a longer period of time. It also improves the quality of the soil.

Some of the major manure sources are:

- Human waste like urine, night soil, sludge, sewage, slurry and other organic town refuse.
- Cattle waste like urine, dung, slurry from biogas plants.
- Agricultural wastes like crop residue, trash, stubble, twigs, dry leaves, etc.
- Water tank wastes like silt, weeds, water hyacinths, etc.
- Argo-based industrial wastes like bagasse, oil cakes, corn cobs, press mud, wheat straw, fruit and vegetable processing wastes, wheat bran, mushroom compost, etc.
- Poultry wastes like droppings, extra feed, etc
- Kitchen waste can be used to make organic manure for gardening.

The most principle of organic farming is the fact that it treats soil as a living entity. The fertility of the soil is never compromised upon and crops that are grown in the soil are indigenous crops. Crop rotation is practiced very religiously in organic farming so that the health of the soil is maintained. As per the International Federation of Organic Agriculture Movement, organic farming is based on the principles of health, ecology, fairness and care in that order.

MANURES

Manures are plant and animal wastes that are used as sources of plant nutrients. They release nutrients after their decomposition. The art of collecting and using wastes from animal, human and vegetable sources for improving crop productivity is as old as agriculture. Manures are the organic materials derived from animal, human and plant residues which contain plant nutrients in complex organic forms. Naturally occurring or synthetic chemicals containing plant nutrients are called fertilizers.

Manures with low nutrient, content per unit quantity have longer residual effect besides improving soil physical properties compared to fertilizer with high nutrient content. Major sources of manures are:

1. Cattle shed wastes-dung, urine and slurry from biogas plants
2. Human habitation wastes-night soil, human urine, town refuse, sewage, sludge and sullage
3. Poultry Jitter, droppings of sheep and goat
4. Slaughterhouse wastes-bone meal, meat meal, blood meal, horn and hoof meal, Fish wastes
5. Byproducts of agro industries-oil cakes, bagasse and press mud, fruit and vegetable processing wastes etc

6. Crop wastes-sugarcane trash, stubbles and other related material
7. Water hyacinth, weeds and tank silt, and
8. Green manure crops and green leaf manuring material

Manures can also be grouped, into bulky organic manures and concentrated organic manures based on concentration of the nutrients.

ORGANIC MANURE

The use of chemical fertilizer is increasing day-by day for the sake of increasing production. By excess use of it, the fertility of soil and health also deteriorate. Therefore the use of organic manure is one of the alternative ways for enhancing production and improves the soil health. It is not only cheaper; easily available ensures sustainable agriculture too. Introduction Organic manure Organic manures are natural products used by farmers to enhanced sustainable crop production. There are a number of organic manures like farm yard manure, green manures, compost prepared from crop residues and other farm wastes, and biological wastes - animal bones, slaughter house refuse. Introduction Organic manure Organic manures are natural products used by farmers to enhanced sustainable crop

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BENEFITS OF ORGANIC MANURES

- Organic manures increase the organic matter in the soil.
- Organic matter in turn releases the plant food in available form for the use of crops.
- Organic manures should not be seen only as carriers of plant food.
- These manures also enable a soil to hold more water and also help to improve the drainage in clay soils.
- They provide organic acids that help to dissolve soil nutrients and make them available for the plants.

SOURCES OF ORGANIC MANURE

1. By products of farming and allied industries.
2. FYM, droppings, crop waste, residues, sewage, sludge, industrial waste.

OBJECTIVES

- To increase genetic diversity.
- To promote more usage of natural pesticides.
- To ensure the right soil cultivation at the right time.
- To keep and build good soil structure and fertility.
- To control pests, diseases and weeds.
- To know how to recycle the organic waste.
- To have contribution to the nature and economy of the state.
- To increase the organic content of the soil.

PROJECT THEME

Composting is a biological process in which microorganisms of aerobic (which require air or oxygen for development) and anaerobic (which functions in absence of air or

free oxygen) decompose organic matter. Conversion of organic wastes generated at household level to useful materials like manure is the theme of the project. Kitchen wastes and garden wastes, generated on a daily basis are to be processed and converted to compost by using appropriate methods depending upon convenience and accessibility. Composting encourages the production of beneficial bacteria and fungus that breaks down the organic matter to create a rich nutrient filled material. Conversion of organic wastes generated at household level of useful materials like manure is the theme of the project. Kitchen waste and garden waste generated on a daily basis are to be processed and converted to compost by using appropriate methods.

METHODOLOGY

I used bio composter for making organic manures. Kitchen wastes were used for making organic manure. Day by day kitchen wastes were dumped on the bio composter and after few weeks we get a liquid called slurry which contain the essence of all wastes that we put on the bio composter and it is very good for plants to grow as it contain microorganisms that boosts the plants growth. Also we used kitchen wastes like onion peel, banana peel and rice

water(diluted with water) .Cow dung were also used and ashes were top dressed.

BIO-COMPOSTER

To use a compost bin effectively, maintain a balance of organic wastes, water, and air. You can achieve this by following these



steps: build a pile of alternate layers of carbon sources (like dried leaves) and nitrogen-rich matter (like fruit peels), keep the pile damp, and turn the pile regularly.

Starting a compost bin powerful enough to break down your kitchen and garden wastes isn't as simple as tossing leaves and fruit peels in a bin and hoping for the best. First, you need to know what things go into compost bins and how to layer, water, and aerate them for best results.

A compost bin is a multitasking eco-warrior. Not only does it decompose organic wastes around your home, but it also creates a wonderfully rich soil supplement to help your plants grow. The size of the bin is important. Anything too small and the compost has difficulty maintaining heat and moisture. Three-foot square is the minimum, and bigger is definitely better!

WORKING

A compost bin works by creating the ideal environment for decomposition. Organic waste materials slowly turn to compost if they include a balance of green and brown materials, water, and oxygen. Compost bins are designed to provide these conditions while containing everything in a clean and compact design.



Microorganisms do the dirty work!

A compost bin is like an all-you-can-eat buffet for tiny organisms like bacteria and fungi. They break down the organic materials, absorb what they can, and release good-for-plants nutrients like nitrogen, phosphorus, and magnesium. Wiggly insects like centipedes and worms often join the feast, helping to transform our organic household wastes into nutrient-packed goodness for our gardens.

A well-functioning compost bin needs carbon-rich materials (also known as browns) and nitrogen-rich materials (called greens). Microorganisms use carbon and nitrogen to fuel and strengthen themselves so they can create your compost.

Once you've got a good collection of greens and browns, you can add them to your compost bin in strategic layers.

Start with a layer of browns, about 2 inches high. Lightly water the layer. Next, add a layer of greens, also about 2 inches tall.

Greens (Usually Wet)	Browns (Usually Dry)
Fruit and vegetable scraps	Shredded scrap paper and non-glossy newspaper
Yard waste like fresh grass clippings, fresh weeds without seeds, and green grass	Yard waste like dried leaves, dried grass clippings, dried weeds without seeds, small branches, and twigs
Teabags, coffee grounds	Straw and sawdust
Manure	Egg cartons

Some organic materials can sabotage your composting efforts. Don't add these to your compost bin:

- Meat and bones
- Dairy products
- Fats and oils
- Pet droppings
- Diseased or poisonous plants
- Yard waste treated with chemical pesticides
- Stickers stuck on fruit and veg peels
- Charcol or coal ash



SLURRY

ASH AS A MANURE



Ash can be used as an organic manure or soil amendment, depending on its source and composition. Here are some key considerations when using ash as a form of organic manure:

Ash can be broadly categorized into two types: wood ash and crop residue ash.

- 🌿 **Wood Ash:** Wood ash is the residue left behind after burning wood or plant material, such as leaves, branches, and twigs. It contains a variety of minerals, including calcium, potassium, magnesium, and trace elements. Wood ash is alkaline, so it can help raise the pH of acidic soils.
- 🌿 **Crop Residue Ash:** Crop residue ash is the result of burning agricultural residues like crop straw or husks. Its nutrient content varies depending on the type of crop burned.
- 🌿 **Nutrient Content:** Ash can be a valuable source of nutrients for plants. It typically contains potassium (potash) and calcium, which are essential for plant growth. However, the nutrient content can vary widely depending on the source of the ash and the burning process.
- 🌿 **pH Adjustment:** Wood ash is alkaline in nature and can be used to raise the pH of acidic soils. This can be beneficial for

certain crops that prefer neutral to slightly alkaline soil conditions.

- ✿ **Application Rate:** When using ash as organic manure, it's essential to apply it in moderation. Excessive application of ash, especially wood ash, can raise soil pH to levels that are detrimental to plant growth.
- ✿ **Mixing with Compost:** To avoid overapplication and ensure a more balanced nutrient release, mix ash with organic compost before applying it to the soil. This can help improve the overall quality of the organic matter in the soil.
- ✿ **Caution with Salt Content:** Some ashes may contain high levels of salts, which can be harmful to plants if applied in excess. Conduct a soil test or consult with local agricultural extension services to determine the suitability and appropriate application rate for the specific ash you plan to use.
- ✿ **Safety Precautions:** When handling ash, especially wood ash, wear protective clothing and avoid inhaling the dust. Also, be cautious when using ash from materials that may have been treated with chemicals or paints, as these substances can contaminate the ash.
- ✿ **Environmental Considerations:** Be mindful of local regulations and environmental guidelines when using ash as a soil amendment, especially if you plan to use large

quantities. In some areas, there may be restrictions on ash disposal and use due to potential environmental impacts.

In summary, ash can be a valuable organic manure when used correctly and in moderation. However, it's essential to assess the nutrient content, pH impact, and potential contaminants of the specific ash you plan to use and adjust your application accordingly to promote healthy plant growth and soil quality.

COW DUNG AS A MANURE



Cow dung is a popular and widely used organic manure in agriculture and gardening. It has been used for centuries as a valuable source of nutrients and organic matter to improve soil fertility and plant growth. Here are some key points to consider when using cow dung as organic manure:

🌱 **Nutrient Content:** Cow dung is rich in essential plant nutrients, including nitrogen,

phosphorus, and potassium (N-P-K), which are primary elements needed for plant growth. It also contains secondary and micronutrients, organic matter, and beneficial microorganisms.

- 🌿 **Organic Matter:** Cow dung adds organic matter to the soil, improving its structure and moisture-holding capacity. This helps enhance soil aeration, water retention, and overall soil health.
- 🌿 **Microbial Activity:** Cow dung contains beneficial microorganisms, including bacteria and fungi, which can contribute to improved soil health and nutrient cycling. These microorganisms help break down organic matter, making nutrients more available to plants.
- 🌿 **pH Adjustment:** Cow dung is generally near-neutral in pH, which means it can help maintain or slightly adjust the pH of the soil towards a neutral range, which is suitable for a wide variety of plants.

- 🌿 **Composting:** While cow dung can be applied directly to the soil, composting it first can further enhance its benefits. Composting cow dung with other organic materials, such as straw, leaves, or kitchen scraps, can accelerate decomposition and improve the quality of the resulting compost.
- 🌿 **Application Rate:** The application rate of cow dung should be based on soil testing and the specific nutrient requirements of the plants you are growing. Avoid over-application, as excessive amounts of nutrients can harm plants or lead to nutrient runoff into waterways.
- 🌿 **Safety and Hygiene:** When handling cow dung, particularly fresh dung, take proper hygiene precautions. Fresh cow dung may contain pathogens, so it's important to compost it or allow it to age before using it in your garden. Composting or aging also reduces the risk of weed seeds being present in the dung.
- 🌿 **Storage:** If you plan to store cow dung for future use, keep it in a dry and well-ventilated area. Properly aged or composted cow dung is less likely to have unpleasant odours.

- 🌿 **Use in Biogas Production:** In addition to being used as manure, cow dung is a valuable resource for biogas production. Biogas is a renewable energy source generated by the anaerobic digestion of organic materials like cow dung. It can be used for cooking, heating, and generating electricity.
- 🌿 **Regulations:** Be aware of any local regulations or guidelines regarding the use of animal manure, including cow dung, in your area. Some regions have specific rules to prevent environmental contamination.

Cow dung is a valuable organic manure that can improve soil fertility, enhance plant growth, and promote overall soil health when used appropriately. Composting or aging cow dung is recommended to reduce the risk of pathogens and weed seeds and to maximize its benefits as a soil amendment.

OBSERVATION AND INTERFERENCES



'Through this work I understood the importance of organic manures in crop production. Organic manures are beneficial in

the cultivation of crops. The compost I prepared was very beneficial for my organic farming. It increases the organic matter in the soil and I got high yield of vegetables. It is less expensive and very effective. I can recycle and reuse many of the organic wastes especially kitchen wastes for better production of crop. Through this work, I understood that organic manure preparation at home is very simple and effective. We can effectively convert our daily dustbins into rich organic manures and cultivate healthy vegetables and plants with it.

CONCLUSION

Organic manures are natural products that are used by farmers to provide food for the crop plants. Composting and Organic recycling used to be a backburner, because refuse disposal is inexpensive and landfill capacity. It is economically competitive with other waste management methods. In addition, compost is an environmentally beneficial product, while large scale composting operations will be increasingly, the most cost effective way of handling yard, kitchen and garden waste is in our own backyards, avoiding trucking and fuel costs. With the continued depletion of available landfill space and anticipated high collection and disposal fees needed to cover the

cost of the refuse disposal facilities being built today, the separation of leaves, grass clippings, brush, and other yard debris from refuse will become increasingly attractive. Organic manure is considered as an ideal option for green and clean environment.

THANK YOU...