

*Theme 1: Forage production and pasture management*

# USE OF NATURAL RESOURCES, COMPOST MAKING, FARM YARD MANURE, MANURE STORAGE AND USE (Level 1)

Topic	Training & information Content
1.1	Planning of fodder/feed requirements for the dry season
1.2.1	Integrated soil fertility management I
1.2.2	Integrated soil fertility management II
1.3	Use of natural resources, compost making, farmyard manure, manure storage and use
1.4	Growing maize and sorghum for fodder and estimating time of harvest and yield
1.5	Brachiaria, Panicum, & Napier (cut and carry) grass management
1.6	Growing fodder trees and use of feed
1.7	Estimating of dry matter content, feeding value and yield of various fodder crops
1.8	Guidelines for Tropical pasture management and grazing management
1.9	Scaled mechanization of forage production and pasture management (harvesting practices)
1.10	Operating farm equipment and self-propelled tractors
1.11	Mechanization of feeding management
1.12	Economics of forage and pasture production



## 1. You will learn about (learning objectives):

- Important of conserving natural resources.
- Ways of conserving natural resources.
- Recycling waste in a dairy farm.



## 2. Introduction

- Dairy farming depends on many natural resources from the environment.
- All these resources should be well managed.
- Adoption of climate-smart farming systems helps conserve natural resources.



### 3. Why conserve natural resources?

- Sustainable livestock production can be practised through:
  - i. Improving productivity without affecting natural resources and environment at large.
  - ii. Minimizing waste through recycling i.e. compost making.



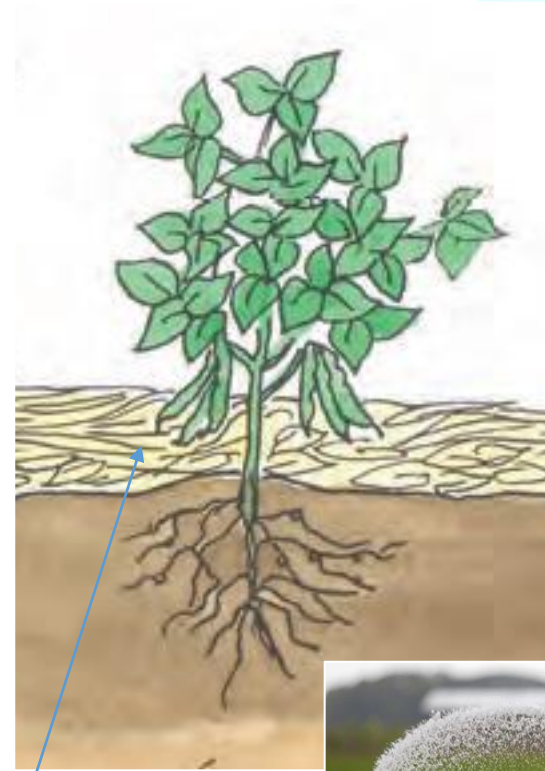
## 4. How to conserve natural resources

- Is achieved by;
  - i. Reducing soil erosion.
  - ii. Avoiding pollution of water and soil.
  - iii. Reducing deforestation.
  - iv. Encouraging biodiversity.
  - v. Reducing global warming.
  - vi. Managing energy sources.



## 5. Sustainable farming practices

- Adopting pasture management & sustainable grazing practices.
- Using organic manure and mulch.
- Where inorganic fertilizers are used, apply at recommended rates (soil test).
- Improving water management during farming operations and encourage recycling.
- Minimum tillage.
- Intercropping and crop rotation, preferably with leguminous crops/trees.



Organic mulch



Apply inorganic fertilizers at recommended rates

## 6. Recycling resources in dairy

- The ultimate way to effectively manage resources sustainably is by adopting recycling.
- Farmers can practice recycling by:
  - i. Recycling dung to farmyard manure.
  - ii. Using methane digesters to convert waste to energy.
  - iii. Recycling or treating water from cow sheds for irrigation.
  - iv. Compost making.



Compost making

## 7. Recycling water

- Water harvesting and recycling are key water handling and management practices.
- Water recycling involves re-distributing already used water to aid in other purposes.





## 8. Biodigester (Biogas)

- Biodigesters store farm waste (manure). Gas produced is directed to produce fuel for cooking and heating water. Organic fertilizer produced is used in place of chemical fertilizers.



## 9. Farm yard manure (FYM)

- Farmyard manure (FYM) basically involves storing together the bedding material, dung and urine collected from animal housing.
- It is the cheapest source of fertilizer.



## 10. Compost making

### Ingredients for a good compost

- Plant materials - any plant materials including weeds and grasses.
- Animal waste i.e. cow dung, chicken droppings.
- Water
- Air (oxygen)



## 11. Making compost manure

- Select site for the pit and clear the ground around, best if near the farm.
  - Site should be well drained.
  - Site should be accessible for easy loading and offloading.
  - Consider direct of wind.
- Dig a pit about 1 meter deep, height should not be too high to avoid materials being compressed by its weight.
- Place organic material in layers with most fibrous plants at the bottom to facilitate drainage.



## 12. Importance of compost manure

- Source of nutrients to plants.
- Improves soil productivity.
- Controls spread of pest and diseases as well as weeds, due to high temperatures in the pit.
- Improves the soil structure when used.
- Humus improves moisture holding capacity of soil.
- Reduces effects of soil erosion.




## 13. Signs of ready manure

- Volume of the manure is low/goes down.
- Manure is light in weight and crumbly when felt between fingers.
- Moisture content of manure is low/not dump/wet.
- Change in smell from rotting to earthy-like smell.
- Becomes dark in colour.



YouTube



How to Compost Manure in Thirty Days

531,075 views • Mar 22, 2011

1.8K DISLIKE SHARE SAVE ...

GrowPoppies

SUBSCRIBE

A screenshot of a YouTube video player. The video shows a person in red pants watering a large pile of dark brown compost manure with a hose. The video title is "How to Compost Manure in Thirty Days", it has 531,075 views, and was uploaded on March 22, 2011. The channel name is "GrowPoppies".

Watch video:

<https://www.youtube.com/watch?v=dpKuVh8xXXs>

## 14. Vermicomposting

- Vermicomposting is a method of producing compost using earthworms.
- Is not a common method practised by many farmers despite its use as an organic fertilizer.
- The manure produced improves soil health by introducing living soil organisms to the soil.

