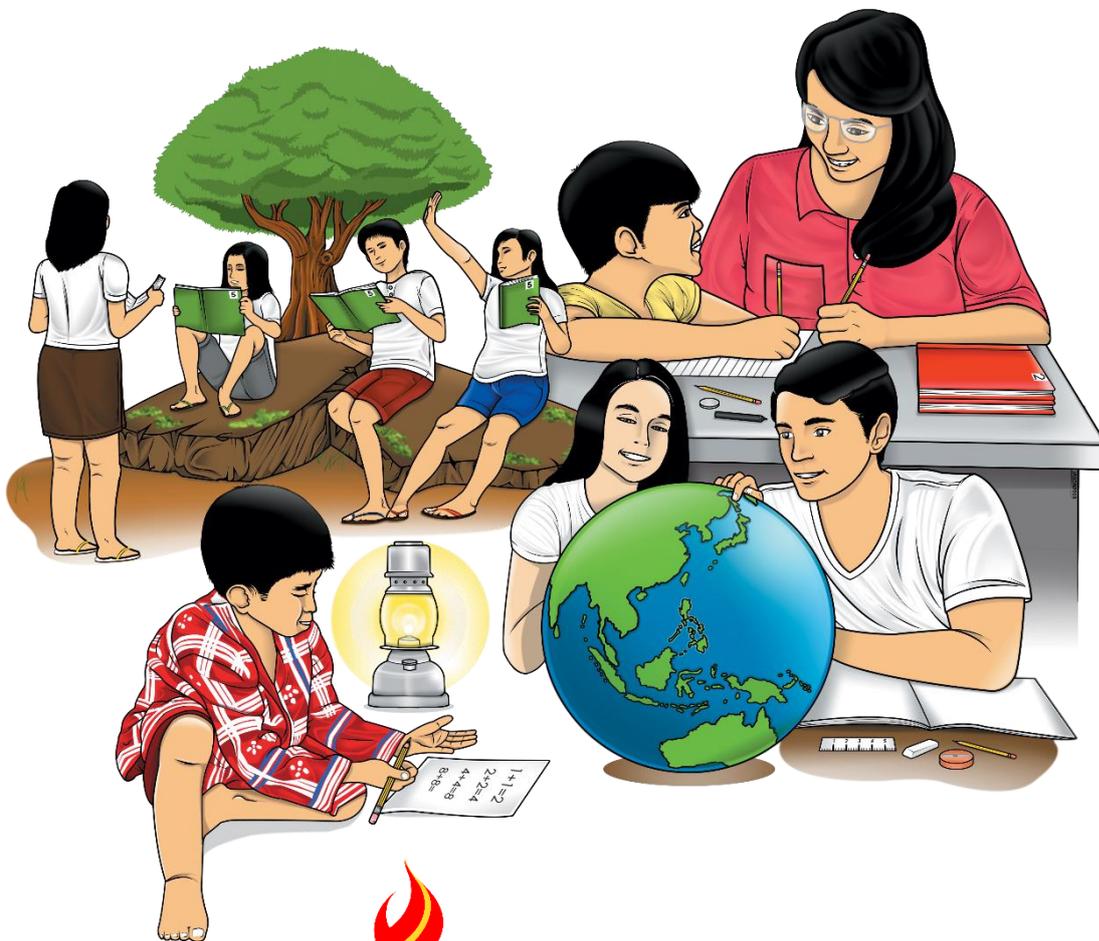


# 6

## Technology and Livelihood Education

# Agri-Fishery Arts

### Module 6: Caring Orchard Trees



**TLE – Agri-Fishery Arts – Grade 6**  
**Alternative Delivery Mode**  
**Module 6: Caring Orchard Trees**  
**First Edition, 2020**

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# 6

**Technology and Livelihood Education**

# **Agri-Fishery Arts**

**Module 6: Caring Orchard Trees**

## **Introductory Message**

This Self-Learning Module (SLM) is prepared so that you, our dear learners, can continue your studies and learn while at home. Activities, questions, directions, exercises, and discussions are carefully stated for you to understand each lesson.

Each SLM is composed of different parts. Each part shall guide you step-by-step as you discover and understand the lesson prepared for you.

Pre-tests are provided to measure your prior knowledge on lessons in each SLM. This will tell you if you need to proceed on completing this module or if you need to ask your facilitator or your teacher's assistance for better understanding of the lesson. At the end of each module, you need to answer the post-test to self-check your learning. Answer keys are provided for each activity and test. We trust that you will be honest in using these.

In addition to the material in the main text, Notes to the Teacher are also provided to our facilitators and parents for strategies and reminders on how they can best help you on your home-based learning.

Please use this module with care. Do not put unnecessary marks on any part of this SLM. Use a separate sheet of paper in answering the exercises and tests. And read the instructions carefully before performing each task.

If you have any questions in using this SLM or any difficulty in answering the tasks in this module, do not hesitate to consult your teacher or facilitator.

Thank you.



## ***What I Need to Know***

Orchard project should have proper planning to be productive. The care of seedlings and trees must be given high priority for plant growth and survival. Plants grow faster and healthier when properly cared.

This module will cover topics on how to care orchard trees or seedlings. After going through this module, you are expected to:

1. perform systematic ways of caring orchard trees or seedlings such as watering, cultivating, preparing, and applying organic fertilizers.



## ***What I Know***

In this activity, you are tasked to answer questions by matching the word/s in Column A with the given statement in Column B. Then, write the letter of the correct answer you have chosen on a separate sheet of paper.

Column A	Column B
1. PPE	A. It becomes the foundation for the best, fast-growing trees and is an extremely important step before planting
2. Manual Watering	B. Also called as rows cultivation, this is done only by cultivating the soil in rows or the plant between the rows.
3. Liquid Fertilizer	C. An activity done to support the tree in order to stand well after planting or growing.
4. Land preparation	D. An essential element for plant growth and survival. Trees and fruit-bearing trees cannot survive without it.
5. Staking	E. Plants are watered using different tools for irrigation such as pail, sprinkler, and dipper.
6. Humus	F. Water is distributed to each row and applicable for row crops with uniform slopes.
7. Off-barring	G. This promotes the growth of beneficial organism, adds more nutrients to the soil and gives high production.
8. Surface & Furrow Irrigation	H. Made from the juice of plants and vermin compost through the process of concoction
9. Organic fertilizer	I. A decayed matter from plants and animals mixed with soil
10. Water	J. What do you call equipment such as face mask, hand gloves, apron, working clothes, and boots?
	K. Measure all ingredients properly and follow the correct procedures
	L. Level the area then file the second layer of animal manure about 5-8cm. Thicken layer over the first layer.

## Module

# 6

## Caring Orchard Trees

The attitude of being resourceful and industrious should be kept by a person engaged in farming to achieve higher crop production. These attitudes lead to maximize the use of time, money, and efforts in doing the tasks. Care and management of trees require much time and dedication in order to have an abundant harvest.



<sup>1</sup>Trees



<sup>2</sup>Lanzones



<sup>3</sup>Atis



<sup>4</sup>Apple Mango

---

<sup>1</sup> Lynn Greyling, Saturation Adjusted, Free Royalty, <https://www.publicdomainpictures.net/en/view-image.php?image=64429>

<sup>2</sup> Mike Gonzalez, Saturation Adjusted, Free Royalty, Cropped, <https://nl.m.wikipedia.org/wiki/Bestand:Lanzones.jpg>

<sup>3</sup> Tyrone Orbase, Saturation Adjusted, Free Royalty, Stretched, <https://www.flickr.com/photos/tirong/148696320>

<sup>4</sup> Ruben Goingo, Saturation Adjusted, Free Royalty, <https://www.pexels.com/photo/apple-manggo-fruit-fruits-green-385301/>



## ***What's In***

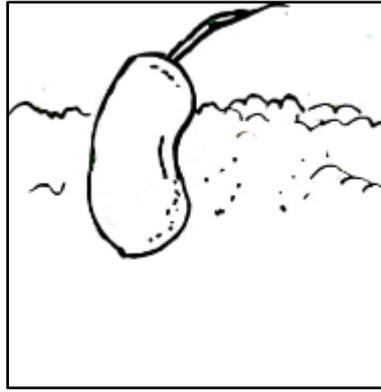
In this activity you are tasked to recall your previous knowledge on related topics in today's module. You are to match the word/s in Column A with the description given in Column B. Write your answer in a separate sheet of paper.

Column A	Column B
1. Sprinkler	a. used for cutting and slicing planting materials
2. <i>Bolo</i>	b. a broad scoop attached to a handle. It is used to dig, lift, and throw loose matter.
3. Hose	c. used to cultivate soil around the plant
4. Shovel	d. used for cutting grass and shaping the plant or shrubs
5. Pruning Shears	e. used to transfer heavy materials from one place to another
6. Gloves	f. used for digging or cutting earth or sand
7. Knife	g. any substance added to the soil that promotes the healthy growth of plants.
8. Wheelbarrow	h. used to water plants in a wide area
9. Spade	i. used for cutting small branches and unnecessary branches
10. Fertilizer	j. used for soil cultivation
	k. a container with a spout to water plant for it to grow healthier
	l. used while working in the garden, made of strong rubber to protect from thorns and withstand punctures.

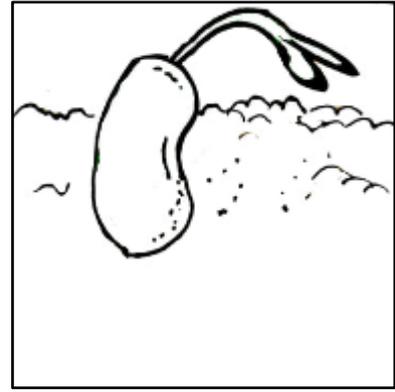
As you start your module, focus your attention to the pictures below.



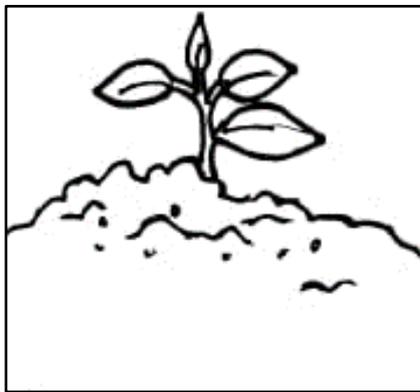
A



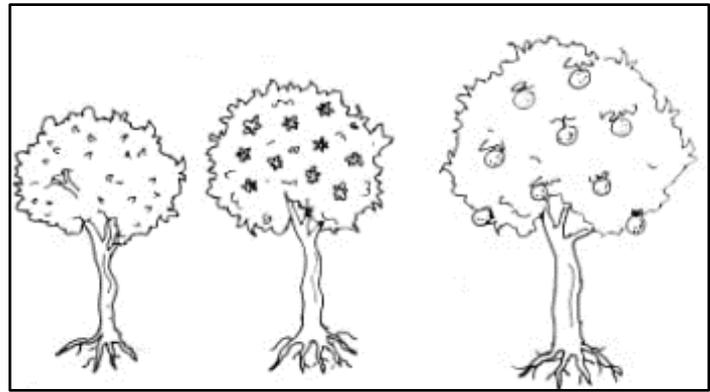
B



C



D



E

From your observation, answer the following questions:

1. Where do trees come from?
2. How do trees grow to become productive?
3. What do you think are the considerations for trees to have fruits?

To answer these questions, read and understand the content of this module on the care of orchard trees.



## **What is It**

When you have an orchard project, careful planning is needed to avoid wasteful spending of resources. Proper care for seedlings and trees is to be undertaken that would include cultivating, watering, and use of fertilizer.

In this module, you will be learning the systematic and scientific ways of caring for orchard trees and seedlings.

### **A. Land Preparation**

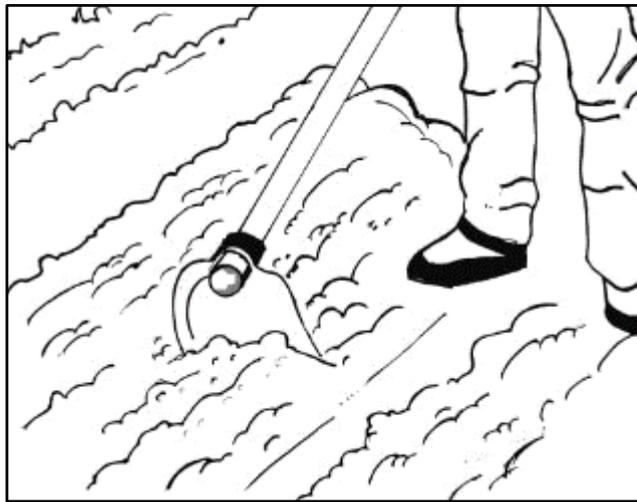


Illustration done by: Learesa G. Amban

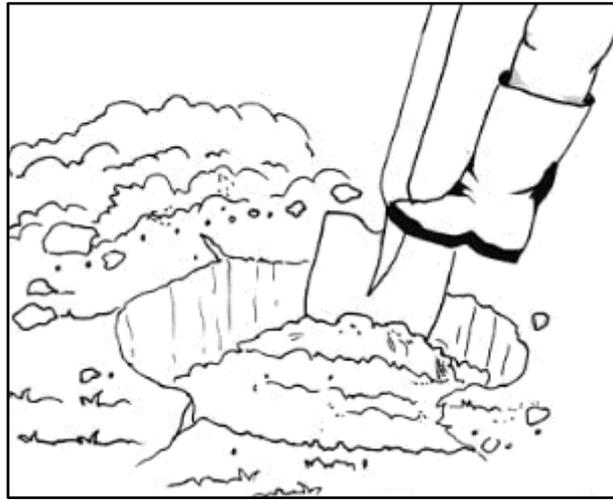
How you prepare the land before planting affects the growth of trees. Land preparation plays a very important role in planting trees that farmers should do.

The following preparations should be done to make the land ready for planting:

1. Remove the grass from the site including the stones to clear the planting area.
2. Plow or cultivate the land to loosen the soil.
3. Layout the digging hole; Layout is necessary for plants to look beautiful as it grows and will facilitate easy watering.
4. Dig the planting hole; The planting hole should be at least one and a half times the size of the root hole. The sides of the planting hole should be loosened.
5. Put organic matter or compost; Organic matter releases nutrients that become absorbed by soil-dwelling microorganisms.

Illustration done by Learesa G. Amban

## Proper Ways of Cultivating the Land



Cultivating the land is a practice to help promote the growth of roots and improve aeration for the fast absorption of nutrients by the soil.

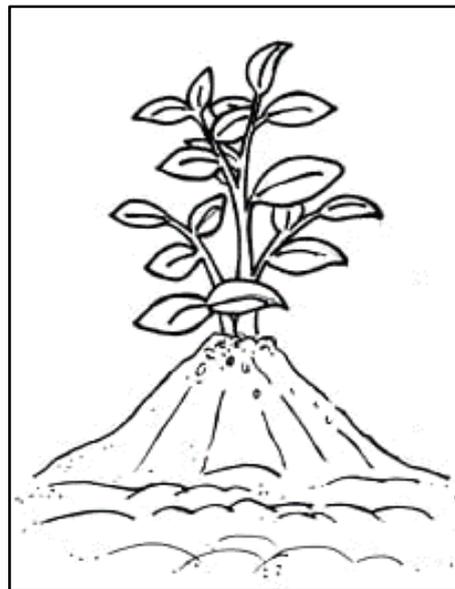
There are 2 ways of doing it:

- a. Off-barring is also called rows cultivation, this is done only by cultivating the soil in rows or the plant between the rows
- b. and Hilling -up is cultivating soil towards the base of the plant or cultivation around the plant.

When cultivation is done properly, the growth of weeds can be controlled. Soil texture will improve plant growth and distractive microorganisms found in the soil will eventually die.



Off-barring



Hilling

## B. Planting

Trees are to be planted within a day it was taken from the plant nursery. Roots should be moist until it can be planted. Provide wrapping materials to pack bare-root trees while waiting the time to plant and remember to add water as needed

Select a sunny, well-drained location in the yard or for a farm. Fruit trees need at least eight hours of sunlight daily to thrive. Dig a hole slightly wider and deeper than the rootball. Fill the planting hole with water and allow it to soak into the soil. Do not add any amendments to the soil.



Illustration done by: Learesa G. Amban

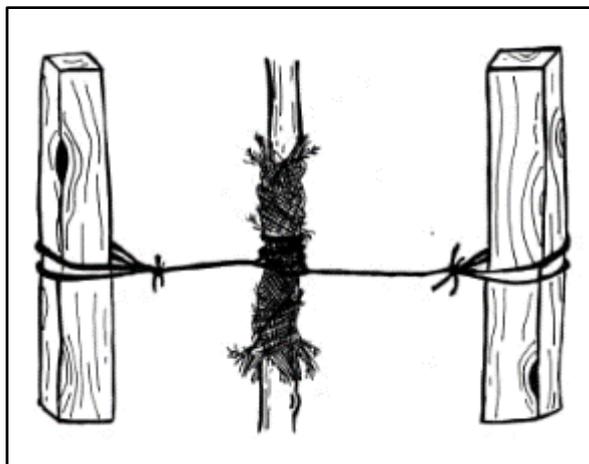
### C. Staking

Newly planted trees needed support to be able to stand firm and grow. Providing support to these newly planted trees is called Staking. Staking are done to new trees that can't stand on their own or those that begin to lean, young trees if the soil is too wet or loose, and tall top-heavy trees with no lower branches.



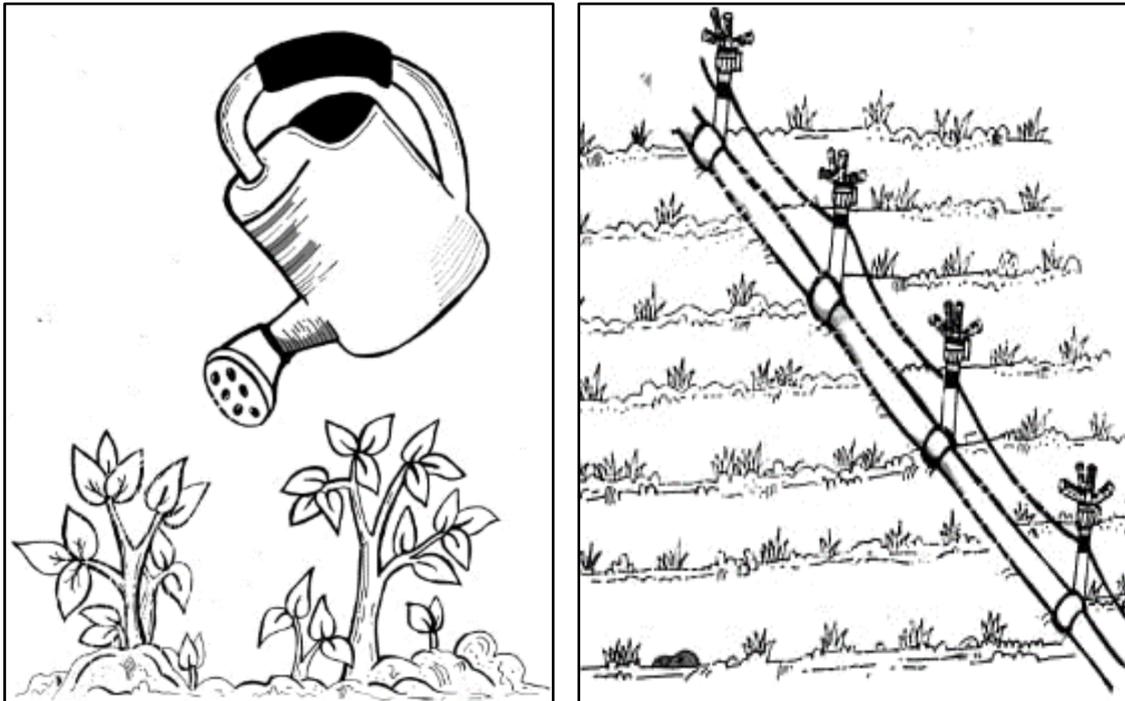
#### How to Stake Trees for Support:

1. Remove the nursery stakes and find two or three stakes (wooden or metal). Place your hand on the trunk and see where it needs to be steadied. That's how tall your stakes should be.
2. Place the two stakes opposite each other and about 1.5' away from the trunk. Use the third stake only if needed and put on an open side of the tree.
3. Materials to be used as stakes should be soft to allow free movement of the tree when it is attached to it. The use of rope or wire is not advised because it may damage the growing tree.



## D. Watering

Water is an essential element for plant growth and survival. Trees and fruit-bearing trees cannot survive without water. Plants grow healthy when properly cared. Watering the plant should be done early in the morning or late in the afternoon to prevent withering.



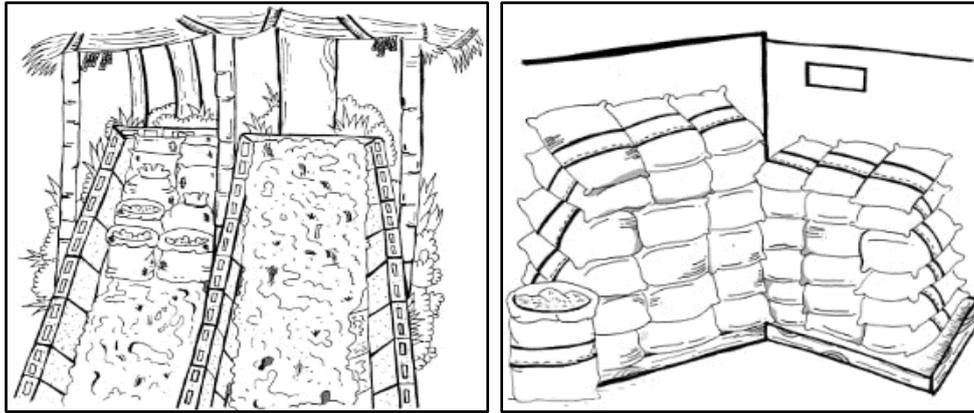
Proper ways in watering plants:

1. Natural watering is a way of watering the plant through the aid of rain. It is the nature's way of watering all plants.
2. Manual watering is done when plants are watered using different tools for irrigation such as pail, sprinkler, and dipper.
3. Artificial watering supplies water to the plant from artificially produced sources like deep wells, dams and rivers with use of motors or machine.

Types of Irrigation

1. Surface and furrow irrigation can be done when water is distributed to each row and applicable for row crops with uniform slopes.
  2. Sprinkler irrigation includes the line, rotating and micro sprinklers in which artificial rain is distributed through special devices that wet the entire field.
  3. Drip or trickle irrigation is a special water source designed to discharge water close to the plant, wetting only that area and leaving the rest dry.
- Sub-irrigation is a very expensive style of irrigation because water source is from the ground.

## E. Preparing and Applying Organic Fertilizer



Fertilizers are substances added to the soil that promote the healthy growth of plants and to increase its productivity. There are two types of fertilizers:

1. Organic Fertilizer is a natural fertilizer from decayed matter, animal, and other natural sources; and
2. Inorganic Fertilizer an artificial fertilizer made from chemicals (either in liquid, soluble, and granular form).

Organic fertilizers came from decomposed organic matter includes animal manure, food washing, plant residues, and other organic wastes. Organic fertilizers contain a high percentage of nitrogen, phosphorus, and potassium which are the necessary elements for the growth of plants. Using organic fertilizer promotes the increase of a beneficial organism, adds more nutrients to the soil, and gives high production.

### Examples of Organic Fertilizers

Given below are some of the organic fertilizers being used in different farms:

	Organic Fertilizer	Description
1	Humus	a decayed matter from plants and animals mixed with soil
2	Manure	animal waste from livestock (big animals) and poultry (chicken)
3	Green manure	comes from decayed plants
4	Compost	decomposed biodegradable waste
5	Liquid Fertilizer	made from the juice of plants and vermin compost through the process of concoction (allows the juice to decompose with red sugar/molasses in a container).

All Illustrations done by: Learesa G. Amban

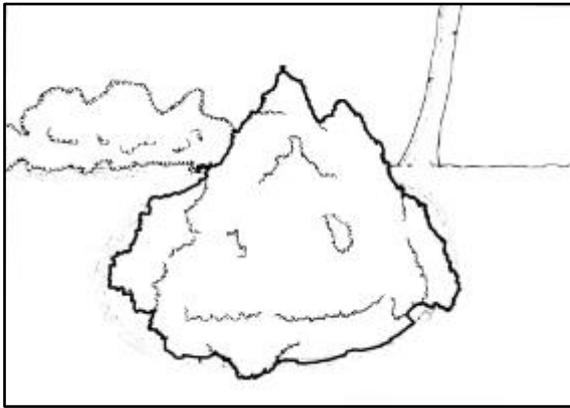
## Ways of Preparing Organic Fertilizer

### 1. Composting

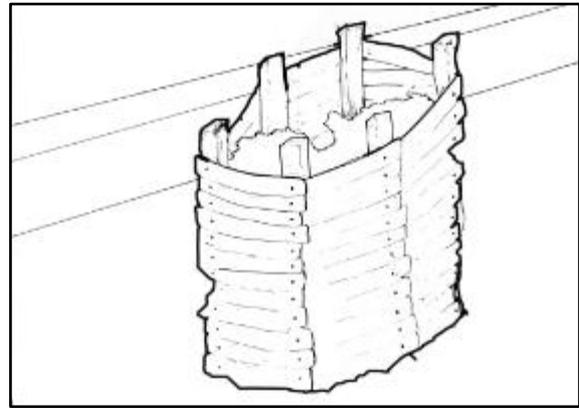
It is a process of decomposing organic matters such as weeds, manure, grasses, leaves, vines, rice hulls and corn stalks until they are ready to be used as fertilizer.

Types of Composting

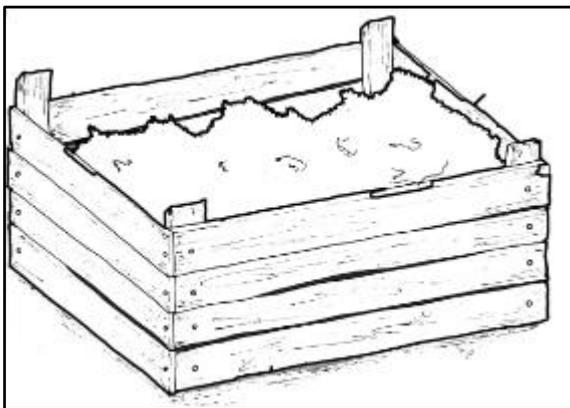
- Compost Pit – composting by digging pit keeping compost underground.
- Compost Basket – composting home garbage in container.
- Compost Heap – a compost pile.
- Vermi Compost – comes from the waste of vermin (earthworm).



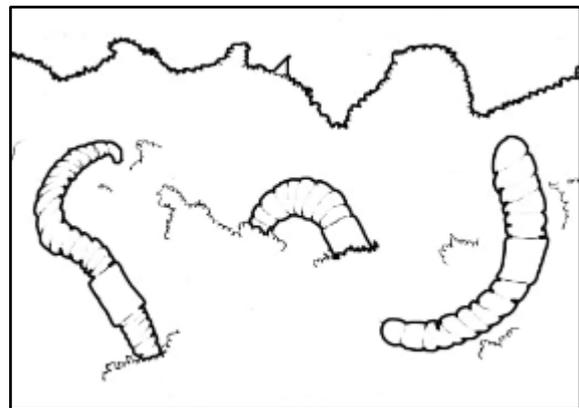
Compost Pit



Compost Basket



Compost Heap



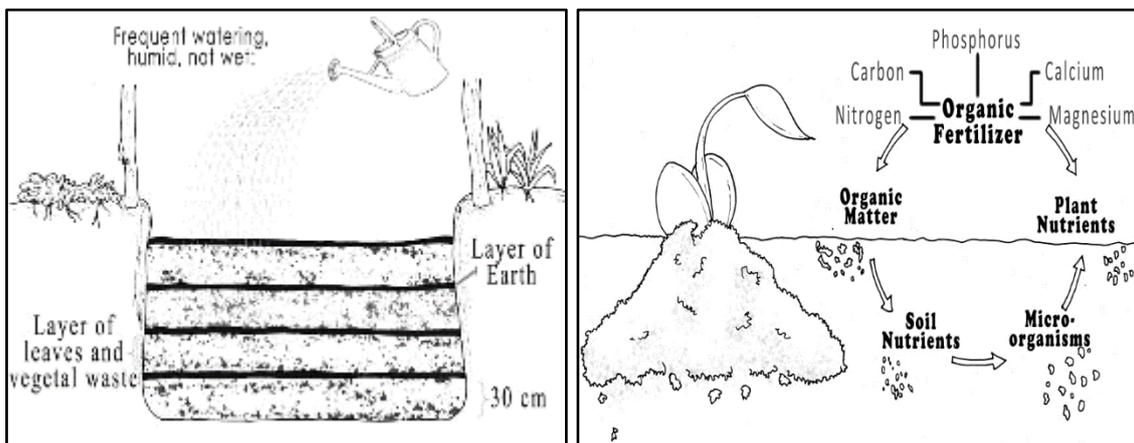
Vermi Compost

## Benefits of Using Organic Fertilizer

The use of organic-based fertilizers in sustainable agriculture benefits farmers, growers, consumers and the environment in many ways such as:

- increases nutrient efficiency and organic matter content in the soil;
- Nurtures the soil with organic matter that reduces dependency on chemical inputs; [www.epicgardening.com](http://www.epicgardening.com)
- brings back soil fertility and maintains plant growth;
- improves the of water use for crop to be strong and drought-resistant;
- does not harm the soil, environment friendly;
- fertilizes the soil and improve its structure and fertility;
- is less expensive, so money can be saved in terms of buying fertilizer;
- is safe to use.

Ways of Preparing Compost:



Here are the steps in preparing organic fertilizer or compost:

1. Dig a compost pit usually at the back of the yard.
2. Build a shelter to protect it from the rain measuring at least 2 meters by 3 meters an alternative to building a shelter is to cover the file with plastic materials.
3. Gather and prepare all compost materials.
4. Pile a layer of grass and kitchen leftover about 12-15cm thick to cover the area.
5. Level the area then file the second layer of animal manure about 5-8cm. Thicken layer over the first layer.
6. Make other layers like the first two layers until the pile reaches 1 1/2 meters
7. Sprinkle the pile with water to make it moist.
8. Cover the top pile with banana leaves.
9. Provide breathers like bamboo holes in the middle of the pile.
10. The compost is ready after three months.

All Illustrations done by: Krystil Ann O. Mejorada and Mary Joy T. Santillan

## 2. Preparing Liquid Organic Fertilizer

How to prepare Liquid Organic Fertilizer:

Ingredients:

Chopped fruits and vegetables  
Red sugar and molasses  
Container  
Manila paper  
Masking tape

Procedure:

1. Mix sugar, chopped fruits and vegetables in a container.
2. Squeeze the mixture until all ingredients look watery.
3. Cover the container using manila paper and masking tape.
4. Put date of process, wait for ten days to harvest the fertilizer.
5. During harvest, filter the mixture. Get the juice.

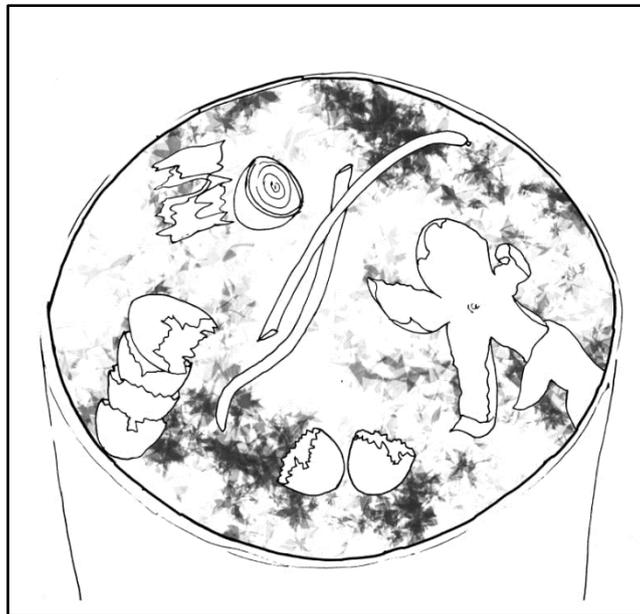


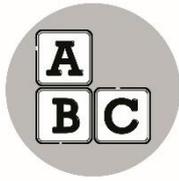
Illustration done by: Learesa G. Amban

## Safety Measures in Preparing Organic Fertilizers

- Always wear the personal protective equipment such as face mask, hand gloves, apron, working clothes, and boots.
- Always read the instruction before doing the activity.
- Follow the guide of proper posture while working to avoid straining your back.
- Check the working condition of tools before using them.
- Never leave your work unattended especially when ingredients are about to be mixed.
- Measure all ingredients properly and follow the correct procedures. Do not deviate from the instructions provided.
- Always focus on the work at hand. Avoid distractions.
- Avoid exposures to pesticides.
- Maintain a clean working place and free from any disturbance.
- Never forget to take a bath and clean thoroughly after working.



Illustration done by: Learesa G. Amban



## ***What's More***

Now, as you do this part of your module this will require you to do some activities to solidify your understanding about the topic. Be ready to apply your skills in the following independent activities:

### **Independent Activity 1**

You are given words to choose from the table below to answer correctly the questions asked in the Independent Assessment Activity 1

- A. Surface or furrow irrigation,
- B. Artificial Watering,
- C. Sprinkler irrigation,
- D. Natural Watering,
- E. Sub-irrigation,
- F. Manual Watering,
- G. Drip or trickle irrigation

### **Independent Assessment 1**

Get your answer from the table given above. Write the letter of the correct answer on a separate sheet of paper.

- \_\_\_\_\_ 1. A type of water irrigation that is very high in cost because the water source is underground.
- \_\_\_\_\_ 2. This include the line, rotating, and micro sprinklers in which artificial rain is generated through special devices that wet the entire field.
- \_\_\_\_\_ 3. Water is distributed to each row, so it is applicable only for row crops with uniform slope.
- \_\_\_\_\_ 4. Water supply is artificially produced from a deep-well, dams, and river with the help of motors
- \_\_\_\_\_ 5. A special water source designed to discharge water close to the plant, wetting only that area and leaving the rest dry.

### Independent Activity 2

Given below are some of the responses from a survey on the use of organic and inorganic fertilizers.

Survey Responses:

a. Odorless and handy b. Always available in the market c. Fast production d. Made of chemicals e. Hazardous to animals f. Expensive g. Foul odor h. It takes time to prepare	i. Makes the soil unfertile (dependent to it) j. Natural k. Easy to produce l. Promote the growth of beneficial organism m. Adds more nutrients to the soil n. Very high in production
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

### Independent Assessment 2

1. Classify the survey responses into 2 groups of Fertilizers (Inorganic or Organic) as shown in the table
2. Choose from the survey responses the advantages and disadvantages on the use of fertilizers.
3. Write your answers on the space (columns and rows) provided in the table.

Fertilizer	Advantages	Disadvantages
Organic		
Inorganic		

### Independent Activity 3

Below are the steps in preparing organic fertilizer through compost pit arranged in scrambled order.

Ways to Make an Organic Fertilizer (Compost Pit)	
A	Chop your composting materials finely
B	Place a board over the hole if you plan to add more scraps.
C	Sow plants above the compost after it has decomposed.
D	Dig the hole for your compost pit.
E	Add the organic materials to the compost pit.
F	Keep the compost pit wet while it is decomposing.
G	Cover your compost with soil.

### Independent Assessment 3

To answer this activity, Arrange the steps in preparing organic fertilizer through compost pit in correct order.

Sequence	Correct Answer (Letter Only)	Ways to Make an Organic Fertilizer (Compost Pit)
1		
2		
3		
4		
5		
6		
7		



## ***What I Have Learned***

1. \_\_\_\_\_ is what farmer should do in order that plant will grow fast and productive?
2. \_\_\_\_\_ a practice to help promote the growth of roots and improve aeration for fast absorption of nutrients by the soil.
3. There are two ways of doing cultivation \_\_\_\_\_ and \_\_\_\_\_
4. \_\_\_\_\_ is also called rows cultivation and is done only by cultivating the soil in rows or between the two plants are being cultivated.
5. \_\_\_\_\_ is cultivating the soil towards the base of the plant or cultivation around the plant.
6. \_\_\_\_\_ is a means to support the tree in order to stand well after planting or growing is a good idea.
7. \_\_\_\_\_ is a process of decomposing organic matters such as weeds, manure, grasses, leaves, vines, rice hulls and corn stalks until they are ready to be used as fertilizer



## ***What I Can Do***

Give the uses of the personal protective equipment (PPE) written below. Use a separate sheet of paper for your answer.

Personal Protective Equipment (PPE)	Uses of Personal Protective Equipment (PPE)
Facemask	
Hand Gloves	
Apron	
Working Clothes	
Goggles	
Boots	



## **Assessment**

Direction: Choose the letter of the correct answer then write your answer on a separate sheet paper.

1. It is a decayed matter from plants and animals mixed with soil for plants to grow fast and become productive
  - a. Green Manure
  - b. Humus
  - c. Manure
  - d. Topsoil
  
2. \_\_\_\_\_ is cultivating the soil towards the base of the plant or cultivation around the plant. When cultivation is done properly, the growth of weeds can be controlled.
  - a. Cultivating
  - b. Hilling – up
  - c. Off-barring
  - d. Planting
  
3. A way of supplying water to the plant from sources like deep wells, dams and rivers with the use of motors or machine.
  - a. Advance watering
  - b. Artificial watering
  - c. Manual watering
  - d. Natural watering
  
4. This irrigation includes the line, rotating and micro sprinklers in which artificial rain is distributed through special devices that wet the entire field
  - a. Drip irrigation
  - b. Sub-irrigation
  - c. Sprinkler irrigation
  - d. Surface & furrow irrigation
  
5. A practice to help promote the growth of roots and improve aeration for fast absorption of nutrients by the soil.
  - a. Cultivating the land
  - b. Irrigating the land
  - c. Preparing the land
  - d. Watering the land

6. Fertilizers are substances added to the soil that promote the healthy growth of plants and to increase its productivity. What do you call a fertilizer from decayed matter, animal and other natural sources?
  - a. Compost Fertilizer
  - b. Inorganic Fertilizer
  - c. Natural Fertilizer
  - d. Organic Fertilizer
  
7. The following statements are some of the benefits from using organic fertilizer EXCEPT one.
  - a. brings back soil fertility and maintains plant growth
  - b. does harm to the soil at times and environment unfriendly;
  - c. is less expensive, so money can be saved in terms of buying fertilizer;
  - d. nurtures the soil with organic matter that reduces dependency on chemical inputs;
  
8. In what situation is staking NOT needed as part of caring a tree?
  - a. new trees that can stand on their own
  - b. tall top-heavy trees with no lower branches
  - c. those trees that begin to lean
  - d. young trees if the soil is too wet or loose
  
9. Composting is a process of decomposing organic matters such as weeds, manure, grasses, leaves, vines, rice hulls and corn stalks until they are ready to be used as fertilizer. What type of composting is done by digging to keep it underground?
  - a. Compost Basket
  - b. Compost Heap
  - c. Compost Pit
  - d. Vermi Compost
  
10. The statements below are some of the safety measures in preparing organic fertilizers. Which statements are correct?
  - I. Always wear the personal protective equipment such as face mask, hand gloves, apron, working clothes, and boots.
  - II. Check the working condition of tools before using them.
  - III. Leave your work unattended especially when ingredients are about to be mixed.
  - IV. Measure all ingredients properly and follow the correct procedures. Do not deviate from the instructions provided.
  - a. I, II & III
  - b. II, III & IV
  - c. III, IV & I
  - d. IV, I & II



## ***Additional Activities***

Make an organic fertilizer either compost or liquid fertilizer to be used in your plants at home following what have been discussed in preparing it. Submit your output to your teacher.



## Answer Key

<p style="text-align: center;"><b>Assessment</b></p> <p>1. B 2. B 3. B 4. C 5. A 6. D 7. B 8. A 9. C 10. D</p>	<p style="text-align: center;"><b>What's More</b></p> <p>Independent Assessment 1</p> <p>1. E 2. C 3. A 4. B 5. G</p> <p>Independent Assessment 2</p> <p>Organic Advantage j, k, l, m, n Organic Disadvantage g, h Inorganic Advantage a, b, c Inorganic Disadvantage d, e, f, i</p> <p>Independent Assessment 3</p> <p>1. D 2. A 3. E 4. B 5. G 6. F 7. C</p>	<p style="text-align: center;"><b>What I Know</b></p> <p>1. J 2. E 3. H 4. A 5. C 6. I 7. B 8. F 9. G 10. D</p>
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