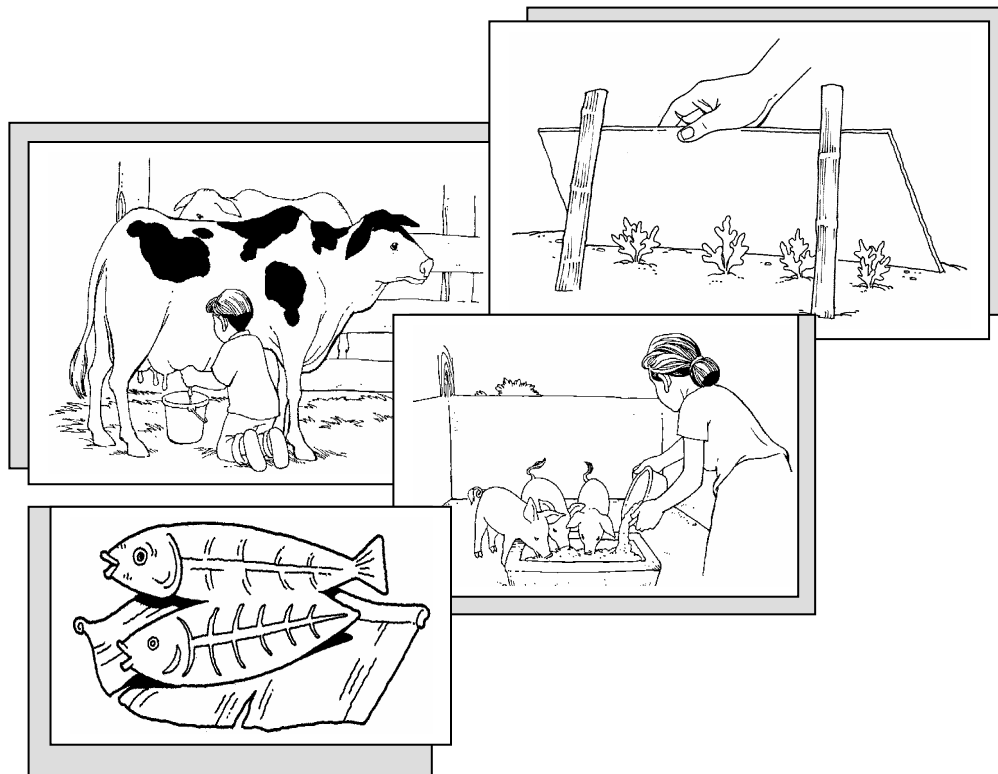


PROJECT EASE

Effective and Affordable Secondary Education

TECHNOLOGY AND LIVELIHOOD EDUCATION

Agriculture and Fishery Arts



MODULE 5

BUREAU OF SECONDARY EDUCATION

Department of Education
DepEd Complex, Meralco Avenue
Pasig City

Plant Crop Production

First Year

Module 5

Help! My World is Getting Smaller



What this module is about

Let no stones be left unturned for an eager learner like you whose behavior is sound and interesting. Welcome to your next module, dear student.

Imagine yourself a plant growing in the garden with the luxuries of morning sunlight, fresh morning breeze, water and an abundance of soil nutrients. What else can you ask for?

However, one morning, you were surprised. Almost all the luxuries you were enjoying are gone because of the weeds the have grown beside you.

Weeds prevent plant growth and development. Weeds grow fast and the easiest way to remove it is through proper weeding and cultivation.

This module focuses on weeds and how these affect plant growth. It describes cultivation and its advantages to plant crop production.



What to learn from this module

Working on this module requires you to be able to:

1. identify types of weeds;
2. explain the advantages of weeding and cultivation;
3. describe the proper ways of weeding and cultivating plants;
4. explain the value of weeding and cultivation to the growth of plants; and
5. identify different garden tools used in weeding and cultivation.



PRETEST

Directions: Encircle the letter of the correct answer.

1. Weeds that reproduce only through seeds and complete their life span in one season.
 - a. annual
 - b. biennial
 - c. perennial
 - d. terrestrial

2. Which of the following weeds is biennial?
 - a. cogon
 - b. makahiya
 - c. olasiman
 - d. mutha

3. Perennial weeds are those that live for
 - a. one season
 - b. two seasons
 - c. 6 months
 - d. two years or more

4. Following are the advantages of weeding the garden, except one
 - a. photosynthesis is enhanced
 - b. breeding places for pests and diseases are destroyed
 - c. water and soil nutrients are utilized by crops
 - d. microorganisms in the soil are utilized

5. The following are farm practices that are easy to perform when weeding is done regularly, except
 - a: watering
 - b. fertilizing
 - c. cultivating
 - d. harvesting

6. The process of loosening the soil at the base of the plant is known as
 - a. cultivating
 - b. fertilizing
 - c. aerating
 - d. transplanting

7. This tool is used to cut and uproot weeds.
 - a. bolo
 - b. cultivator
 - c. spading fork
 - d. trowel

8. This is a method of controlling weeds in common in backyard gardening.
 - a. manual
 - b. mechanical
 - c. chemical
 - d. mulching

9. The mechanical method of controlling weeds is most common in
 - a. home backyard gardening
 - b. school gardening
 - c. big plant crop production
 - d. small-scale farming

10. Which of the following materials is best for mulching?
 - a. clear plastic
 - b. black polyethylene plastic
 - c. ipil-ipil leaves
 - d. dry grass or weeds

Lesson 1

Types of Weeds

There are unfamiliar plants in the garden which grow anywhere even when not planted intentionally. They are called weeds. Weeds are unwanted plants that grow out of place and economically of no use.

To enhance your knowledge of weeds, visit your garden, then locate and identify them. Weeds are also plants which outgrow the plants in the garden. They are classified according to life span.

Types of Weeds

1. Annuals - these are weeds that reproduce only through seeds and complete their life span in one season. Examples are wild mustard, wild spinach, olasiman, pigweed and crab grass.



Wild spinach



Crab grass



Wild mustard

2. Biennials - these weeds live for two seasons to complete their life span. They produce seeds during the second season of their growth and die. Examples are wild eggplant, goatsbeard, mutha and wild carrots.



Wild carrot



goatsbeard

3. Perennial- these are weeds that live longer than two years. It takes them two or more seasons to reproduce seeds, grow roots and underground stems. As the plant produces seeds, its underground root system spreads, too. Examples are *talahib*, cogon, touch me not, quack grass and morning glory.



Talahib

Were you able to identify the weeds that grow in the garden through the illustrations and descriptions given in this module? Find out to what extent.

Activity 1

Classify the weeds in Table 1 as annual, biennial or perennial. Write your answers in Table II.

Table I	
talahib	olasiman
mutha	wild carrots
cogon	goatsbeard
touch me not	wild mustard
crab grass	pigweed

Table II		
Annual	Biennial	Perennial
a.	a.	a.
b.	b.	b.
c.	c.	c.
d.	d.	d.

How well did you make it? Good! Review the items you missed, if any.

 Self-check:

Write True if the statement is true, and False, if the statement is not true.

- _____ 1. Weeds are plants that grow where they are not needed.
- _____ 2. Weeds are plants classified as to life span.
- _____ 3. Annual weeds are those that live for two seasons.
- _____ 4. Cogon and talahib are examples of perennial weeds.
- _____ 5. Mutha and wild carrots are the most common biennial weeds.

Lesson 2

Advantages of Weeding and Cultivation

After knowing the types of weeds that are common in gardens and farms, your next lesson focuses on methods of controlling weeds and why they should be destroyed.

What is weeding? Weeding is removing or eradicating unnecessary plants in the garden.

Following are the advantages of weeding in crop production.

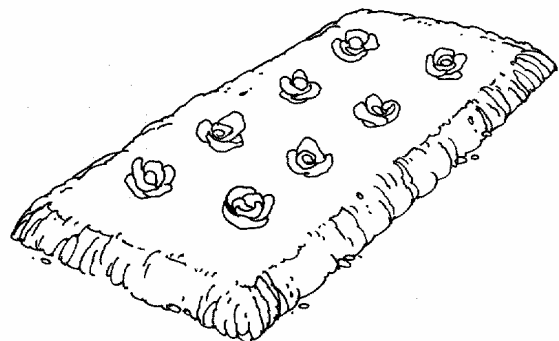
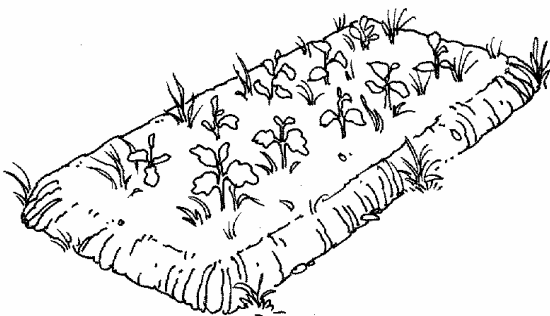
1. Photosynthesis in plants will not be disturbed. If the weeds grow taller or bigger than your plant crop, the process of making food in the latter is affected. Growth of the plants is hampered.
2. Water and nutrients in the soil are used only by the plant crops.
3. Weeding plants regularly destroys the breeding places of insects and pests.
4. It saves time, money and effort.
5. It facilitates garden practices such as fertilizing, cultivating, and harvesting, among others.
6. It improves the quality of crops, particularly, rice.

Another important task in the care of plants is cultivation. Cultivation is loosening the soil around the base of the plant. This practice is beneficial to crops because it promotes soil aeration and stimulates plant growth. It also helps eradicate weeds because of root disturbance.

To see how much you have learned from the preceding topic, work on the next activity.

Activity 2

Analyze the pictures below then answer questions that follow.



A

B

Questions:

1. Which of the picture shows that plants grow bigger and healthier? Why?
2. Which picture shows greater possibility of insect infestation? Why?
3. Which picture shows that water and soil nutrients are being utilized by the plant crops? Why?



Self-check:

Encircle the letter of the correct answer.

1. Which of the following processes is directly affected when weeds are taller and leaves are wider than those of vegetable plants?
 - a. absorption
 - b. photosynthesis
 - c. plasmolysis
 - d. transpiration
2. What is in the soil that weeds compete with plants?
 - a. composts
 - b. fertilizers
 - c. microorganisms
 - d. nutrients
3. How do the insect pests use the weeds around the plants?
 - a. as a resting area
 - b. as a feeding area
 - c. as a metamorphosis area
 - d. as a breeding area
4. Which of the following is saved when the garden is weeded regularly?
 - a. money
 - b. materials
 - c. effort
 - d. a and c
5. Below are the advantages of the cultivating plants, except
 - a. soil aeration
 - b. weed eradication
 - c. soil fertilization
 - d. root development

Lesson 3

Methods of Weeding and Cultivating Plants

After learning the advantages of weeding and cultivation, your next task is to learn the various ways of weeding and cultivating plants.

Here are some efficient methods of controlling weeds in the garden:

1. **Manual Method.** Quite common in small farms, weeds are picked or uprooted using bare hands. Although very effective, it is time consuming.
2. **Mechanical Method.** Faster than hand pulling, weeds are removed through machines or tools. This method is used in large-scale planting.
3. **Chemical Method.** Chemicals known as herbicides are used to destroy weeds, but do not harm vegetables or farm crops. The method is applicable when labor is expensive and not readily available.
4. **Solarization Method.** This is a technique used in controlling weeds when starting a garden and when weeding is a serious problem. Hence, a newly prepared plot is covered with clear plastic and is then exposed to the sun for 10-15 days.
5. **Mulching.** This method uses loose organic materials such as rice straw, banana leaves, coconut leaves, or black polyethylene plastic to cover the soil around the plant or between rows to protect or improve the area. This method prevents the growth of weeds because they do not get direct sunlight needed for photosynthesis.

As previously discussed in the last lesson, cultivation is a practice in crop production that helps promote the growth and development of roots.

There are two ways of cultivating plants, as follows:

1. **Off-barring** - cultivates the soil away from the rows of plants.
2. **Hilling-up** - draws the soil towards the base of the plants.

If these practices are done at the proper time, weeds growing within the rows can be controlled. To be effective however, this must be done when the soil is not too wet.

Now that you have learned the methods of controlling weeds and cultivation, are you ready to try these in your own garden?

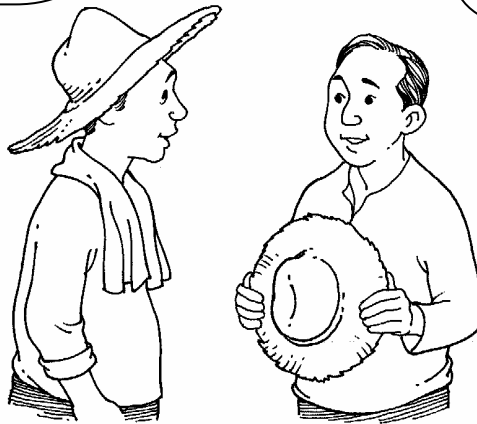
Let us check on the knowledge you gained from the discussion through the activity below.

Activity 3

Mang Anding and Mang Rufing are two plant growers. They have certain problems with the plants they grow. Read their conversation below:

Good morning, Anding. Your crops seem to be growing healthy, but I saw some weeds growing with your plants.

Good day to you, Rufing. I noticed that too. That's my problem now. The area is quite big and there are no laborers for hire in our place. Everyone is busy on their own farm.



I also have a problem, Anding. My radish farm has weeds growing around the area. I'm afraid it will affect the growth of the plants.

I thought everything is fine on your farm. Let us think of ways to solve our problems.

Answer these questions:

1. What method of weed control is suited for Mang Anding's farm?

2. Why?

3. What do you advise to Mang Anding?

4. Justify your suggestions.

 Self-check:

Identify what the following statements are about.

- _____ 1. A method of eradicating weeds, using tools or machine.
- _____ 2. A method of controlling weeds common in small farms.
- _____ 3. Use of herbicides to destroy weeds.
- _____ 4. Use of loose organic materials or black polyethylene plastic to control weeds.
- _____ 5. A technique of cultivation in which soil is drawn towards the base of the plant.

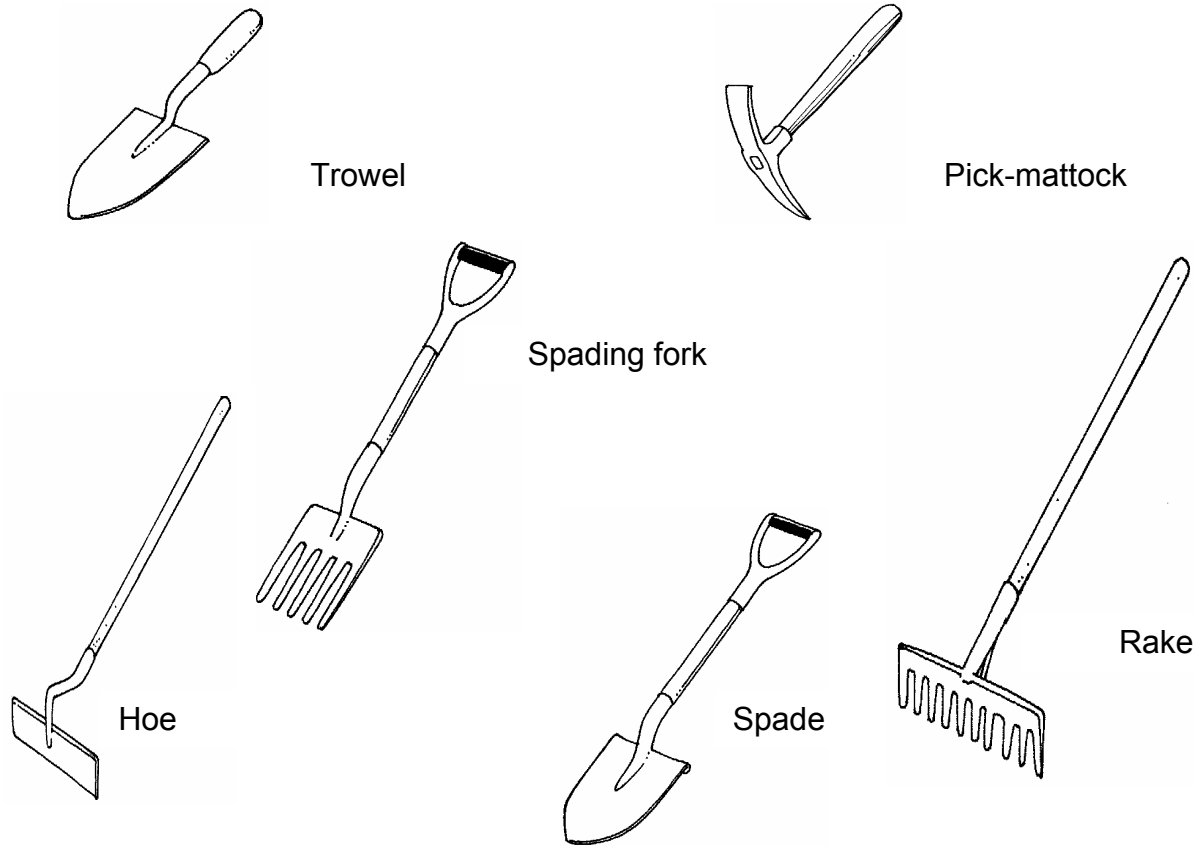
You must have gained much knowledge in this module. Keep in mind that weeds grow between plants and compete with crops which adversely affect both the quality and quantity of the harvest.

Many farmers experience losses due to the problem of weeds, because it does not only interfere with plant growth, but also clog irrigation and drainage canals.

Lesson 4

Garden Tools Used in Weeding and Cultivating

You are now familiar with the methods of weeding and cultivation. Now, let us take time to learn tools used in gardening. As a guide, use the proper tools for purposes of the practicum. The following are examples of weeding and cultivating tools:



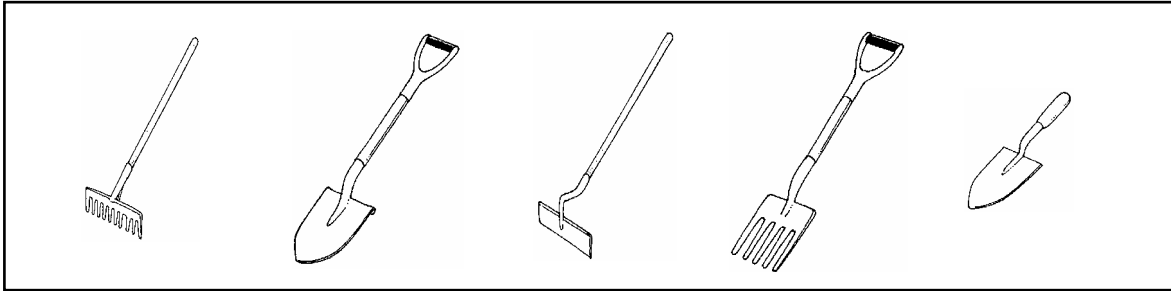
1. Bolo – this is used to cut and uproot weeds.
2. Warren hoe – this is an ideal tool for weeding and shallow cultivation.
3. Cultivator - designed for breaking up soil crusts and cultivating and uprooting rootstock.
4. Spading fork - a tool used to weed and cultivate the soil around the base of bigger plants.
5. Spade – this is used to weed and cultivate plants and to dig trenches. It is easy to pulverize soil using a spade.
6. Hand fork - a cultivating and weeding tool for backyard and school gardening.
7. Trowel – this is like a hand fork and is used to cultivate and weed small garden plants.

There are other tools and materials used in cultivating and weeding plant crops. Your creativity will help if the garden tools are not available.

However, ease in gardening depends much on the use of the right tools for garden work. The right tools make work more productive. Let us now find out if you learned from this lesson well.

Activity 4

Identify the tools in the picture.



Were you able to make it? Very good, if you did. If not, review the items you missed and do them all over again.



Self-check:

Match Column B with Column A. Write only the letter of the correct answer on your paper.

Column A

1. Tools used for cutting and uprooting weeds.
2. Used to break soil crusts, to cultivate and to uproot weeds.
3. Used to weed and cultivate plants and dig trenches.
4. A tool for weeding and cultivating small gardens.
5. A cultivating tool used at the base of plants.

Column B

- a. trowel
- b. pick-mattock
- c. bolo
- d. spading fork
- e. cultivator
- f. spade



LET'S SUMMARIZE

- ❖ Annuals, biennials and perennials are the types of weeds.
- ❖ Weeds are unwanted plants that outgrow plants in the garden.
- ❖ Weeding is removing or eradicating unnecessary plants in the garden.
- ❖ Cultivation is loosening the soil around the base of the plant.
- ❖ Mulching is a method of weeding that uses loose organic materials such as rice straw, banana leaves and coconut leaves.



POSTTEST

Directions: Write only the letter of the best answer in your notebook.

1. Annual weeds are those, the life span of which lasts for
 - a. one season
 - b. two seasons
 - c. 8 months
 - d. 3 years

2. Type of weeds that complete their life span in two seasons.
 - a. annual
 - b. biennial
 - c. perennial
 - d. terrestrial

3. Following are examples of annual weeds, except
 - a. wild mustard
 - b. olasiman
 - c. cogon
 - d. crab grass

4. Which of the following statements is an advantage of weeding?
 - a. Seeds sown germinate fast.
 - b. The breeding places of insect pests and diseases are destroyed.
 - c. Growth of the embryo in seeds is hastened.
 - d. The flowering of vegetables is faster.

5. Regular weeding facilitates farm practices
 - a. easily
 - b. comfortably
 - c. in an attainable way
 - d. in a difficult situation

6. Plant cultivation is a method of loosening the soil which promotes
 - a. flower development
 - b. root growth
 - c. fruit development.
 - d. chlorophyll in leaves

7. A bolo is a tool used to
 - a. cut and uproot weeds
 - b. till the soil
 - c. fertilize plants

- d. remove humps in the garden
8. The manual method of controlling weeds is usually done in that place.
- a. backyard garden
 - b. large-scale farm
 - c. big plant crop production
 - d. rice production
9. Mechanical method of eliminating weeds uses farm tools such as
- a. bolo and trowel
 - b. hoe and tractor
 - c. rake and spade
 - d. spading fork and pick-mattock
10. Black polyethylene plastic is a material commonly used in
- a. transplanting
 - b. fertilizing
 - c. mulching
 - d. sowing.



ANSWER KEY

Pretest

- 1. a
- 2. d
- 3. d
- 4. d
- 5. a
- 6. a
- 7. a
- 8. a
- 9. c
- 10. b

Activity 1

Annual	Biennial	Perennial
a. olasiman	a. mutha	a. talahib
b. wild mustard	b. wild carrots	b. cogon
c. pigweed	c. goatsbeard	c. touch me not
d. crab grass		

Lesson 1: Self-check

1. True
2. True
3. False
4. True
5. True

Lesson 2: Self-check

1. b
2. d
3. d
4. d
5. c

Lesson 3: Self-check

1. Mechanical
2. Manual
3. Chemical
4. Mulching
5. Hilling-up

Lesson 4: Self-Check

1. c
2. e
3. f
4. a
5. d

Posttest

1. a
2. b
3. c
4. b
5. a
6. b
7. a
8. a
9. b
10. c

