

ORGANIC AGRICULTURE INTEGRATION IN
BASIC EDUCATION CURRICULUM (BEC)

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AGE LEVEL: 10-11

GRADE LEVEL : Grade 7

SUBJECT : Technology and Livelihood Education

TOPIC: Safety measures in farm operation

PREREQUISITE :

Students should have prior knowledge about farm operations

DURATION : 1- 2 days

I. Learning Objectives:

A. TLE Objectives

1. Identify safety measures in farm operations.
2. Explain the importance in proper handling of chemicals
3. Explain the importance of 5 'S

B. Organic Agriculture Objectives

1. Discuss the hazard of pesticides application to plants to control pest and it's impact to human and ecosystem.

II: Subject Matter:

A. TLE Concept: Apply safety measures in farm operation

B. OA Integrated concept: Pesticides Impact to human and ecosystem

C. Value focus: Cooperation and, collaboration effort towards accomplishing a given activity.

D. Motivation:

Divide the students into 5 groups. The student shall perform different operation in farm done by a farmer. Let the group guess the scene, those who can perform well will win.

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|----------|---|
| Scenery: | <ol style="list-style-type: none">1. land cultivation using native plow2. planting3. sowing4. trellis making5. harvesting |
|----------|---|

MAIN CONCEPTS AND SKILLS:

Agricultural crop production deal with a lot of activities to be done in different workplace. While performing these activities we expose ourselves to a lot of risk. Workplace

hazard is a major cause of accident injury, or harm to a worker who performs such tasks. These hazards should be the major concern of all involved in a certain job or work.

Hazard – is the potential for harm, or adverse effect on an employee's health. Anything which may cause injury or ill health to anyone at or near a workplace.

Risk – is a likelihood that a hazard will cause injury or ill health to anyone at or near a workplace. The level of risk increases with the severity of the hazard and the duration and frequency of exposure.

Exposure – occurs when a person comes into contact with a hazard.

Farm emergency procedures regarding safety working environment

1. Identify the potential emergencies

- | | |
|--------------------------|----------------------|
| a. fire | g. chemical exposure |
| b. flood | h. injuries |
| c. typhoon | i. illness |
| d. machinery entrapment | j. accidents |
| e. electrical shock | |
| f. snake and spider bite | |

2. Provide emergency facilities appropriate for the sorts of emergencies that might occur on the farm (e.g. deluge washers, eye washes, firefighting, equipment, first aid kits).

3. Make sure that the correct equipment is available to contain and handle any chemical or other dangerous materials spills that may happen.

4. To minimize the risk of personal injury or property damage in the event of an emergency, people working on and visiting the farm need to know and understand the emergency procedures and their responsibilities.

5. Instruct everyone working on the farm in the emergency response procedures

6. Everyone should know the location of fire alarms, fire extinguishers and first aid kits; how and where to contact emergency services, and where to safety assemble in the event of an emergency.

Many chemicals are used on a farm including pesticides. These chemicals are used to fertilize and control pests such as insects, weeds, mollusk, etc. Most of the chemicals are applied by spraying.

Examples of chemical hazards:

- spraying in a strong wind and spray drifting over a dam or the farm house.
- washing spray equipment and the water running into open drains, collecting in puddles, or running into stockyards or dams
- containers or chemicals left lying around. Empty containers lying in a heap.

Some ways you can reduce the risk of hazards from chemicals are:

- use personal protective equipment such as respirators, waterproof clothes, rubber gloves, and waterproof footwear
- make sure chemicals are safely stored and cupboards locked
- never spray chemicals on days when there is a high wind
- know first aid procedures

e. keep a list of all hazardous substances used on the farm

Keep the following guidelines in mind when handling chemicals:

- Do NOT work alone in the laboratory. If you must work alone, notify someone as to where you will be and when.
- Use required personal protective equipment. Eye protection is always appropriate.
- Label all containers with chemical content.
- Keep your hands and face clean. Wash thoroughly with soap and water after handling any chemical and whenever you leave the lab.
- Avoid direct contact with any chemical. Always wear a laboratory coat, at a minimum.
- Keep chemicals off your hands, face and clothing, including shoes.
- Never smell, intentionally inhale or taste a chemical.
- Smoking, drinking, eating and the application of cosmetics is forbidden in areas where hazardous chemicals are used or stored.
- Always use chemicals with adequate ventilation or in a chemical fume hood. Refer to the MSDS and the Standard Operating Procedure to determine what type of ventilation is needed.
- Use hazardous chemicals only as directed and for their intended purpose.
- Inspect equipment or apparatus for damage before adding a hazardous chemical. Do not use damaged equipment.
- Never use mouth suction to fill a pipette. Use a pipette bulb or other pipette-filling device.
- Electrically ground containers using approved methods before transferring or dispensing a flammable liquid from a large container.

Pesticides have a specific purpose in society. Pesticides are intended to:

- kill organisms that cause disease and threaten [public health](#)
- control insects, fungus, and weeds that damage crops
- control pests that damage homes and structures vital to public safety

Because people use [pesticides](#) to kill, prevent, repel, or in some way adversely affect some living organism (the pest), pesticides by their nature are toxic to some degree. Even the [least-toxic products](#), and those that are natural or [organic](#), can cause health problems if someone is exposed to enough of it.

People come into contact with pesticides in many ways, including:

- When pesticides are used in and around our homes and gardens
- When pesticides are used on our [pets](#)
- When we [work with pesticides](#)
- When pesticides are used [in our communities](#) or in our [environment](#)
- When pesticides are used on [the food we eat](#)

The [risk](#) of health problems depends not only on how toxic the ingredients are (Pesticide Ingredients), but also on the amount of [exposure](#) to the product. In addition, certain people

like [children](#), [pregnant women](#) and sick or [aging populations](#) may be more sensitive to the effects of pesticides than others.

E. Materials: sample of chemical, chalk board, manila paper, crayon

III. Learning activities:

A. Preliminary activity

Unlocking difficulties

Chemical - includes chemical substances such as acids or poisons and those that could lead to fire or explosion, like pesticides, herbicides, cleaning agents, dusts and fumes from various processes such as welding

Safety – the physical or environmental conditions of work which comply with the prescribed Occupational Health Safety (OHS) standards and which allow the workers to perform their job without or within acceptable exposure to hazards.

Health – a sound state of the body and mind of the worker that enables him or her to perform the job normally.

B. Lesson Proper

*Activity

Let the student see the video on the proper way of handling chemicals.



Tool Box Safety Talks- 'Chemical Safety'.flv



Safe Chemical Handling - Lab Safety Video Part 5.flv

Ask the students the following questions after the video presentation

1. What is the video all about?
2. Who are performing in the activity?
3. what did they do?
4. If you were in the video, would you do the same?

*** Analysis**

Ask the following question.

1. Why is safety measures is important in farm operations?
2. What happen if we will not practice safety measures?
3. What if a farmers will not practice safety measures during the handling of chemicals?
4. What should be the proper way of disposing chemical containers?

*** Abstraction**

Let the students make a sun gram showing safety measure and proper handling of chemicals.

(See Attachment 1.1)

*** Application**

Divide the group into 5 groups. Each group will have to create a role play on the proper way on handling chemicals and the 5 household rules (5's).

- Group 1 - proper handling of chemicals and the first household rule (Sorting)
- Group 2 - proper handling of chemicals and the second household rules
(Systematizing)
- Group 3 - proper handling of chemicals and the third household rule
(Standardizing)
- Group 4 - proper handling of chemicals and the fifth household rule
(Sweeping)
- Group 5 - proper handling of chemicals and the fifth household rule
(Self- Discipline)

IV. Evaluation:

Let the students create a jingle on the proper way of handling chemicals. Make it sure that the content will be base from the topic.

(See Attachment 1.3 for the rubrics)

V. Assignment

Let the students to conduct hazard report for them to recognize and be aware of the risks ahead of any tasks. (See Attachment 1.4)

Instructions:

- Visit farm near your school or home
- Observe the sorroundings
- List all the possible hazard observed
- Classify these hazards
- Identify persons who are at risk with this hazards
- Suggest all possible solution to reduce or eliminate the risk

- Report your findings to uoye teacher

Materials needed:

Quantity	Description
2 sheets	Bond paper short
1 pc	Pencil / Ballpen

Work will be evaluated using the following criteria:

Performance rubrics	5	4	3	2	1
1.Potential hazard are properly identified					
2.Report is properly made					
3. Suggestions are made to reduce the risks					
4. Potential victims are properly identified					

Use rating scale of 1 to 5 where

5 – all 4 conditions were met

4 – 3 conditions were met

3 – 2 conditions were met

2 – 1 condition were met

1 – present but done nothing

References: npic@ace.orst.edu

K -12 learning module in Horticulture

Integrating Climate Change Issues in Southeast Asian Schools

[Youtube.com/watch?v=uiB8qnlZTAM](https://www.youtube.com/watch?v=uiB8qnlZTAM)

