**ORGANIC AGRICULTURE INTEGRATION IN BASIC EDUCATION CURRICULUM (BEC)**

Edena F. Beriong

Dujali National High School

Dujali, B.E. Dujali, Davao Del Norte

**GRADE LEVEL:** Grade 9
**SUBJECT: Horticulture 9**
**TOPIC:** Apply the recommended kind and rate of fertilizer
**DURATION:** 2 sessions

**LEARNING OBJECTIVES**

*Subject Matter Objectives:* By the end of this lesson, students should be able to:

- Identify kind and the importance of fertilizers;
- Know the methods of determining the soil fertility;
- Perform methods of applying fertilizers; and
- Compute the recommended rate of fertilizer application.

*Organic Agriculture Objectives:*

- Define organic fertilizer;
- Differentiate organic from inorganic fertilizer;
- Classify fertilizers as organic or inorganic fertilizer; and
- Give the advantages and disadvantages of organic and inorganic fertilizer.

**MAIN CONCEPTS AND SKILLS**

- The past lesson talks about transplanting. It is the process of transferring the seedlings from the nursery to the field where they continually grow and develop. Success in transplanting seedlings to the field or garden depends on good seedlings, good condition of the soil, favorable weather conditions, time of transplanting, use of appropriate tools and other materials and on proper manner of doing the work. Seedlings are like babies. They are fragile and vulnerable so the principles of Tender Loving Care (TLC) should be strictly followed.

- Soil is the only of the many factors that contribute to high productivity. Fortunately, it can be controlled by man. Maximum benefit from sound fertility program; can be realized only if the other factor of plant growth are favorably controlled.

- A **fertilizer** is any organic or inorganic material of natural or synthetic origin that is added to the soil to supply certain elements essential to plant growth. Fertilizer materials are used to increase the growth rate, yield and quality or nutritive value of plants. For many decades in the past, the term fertilizers practically meant commercial fertilizers of nonliving origin. In recent years, however, increasing attention has been focused on organic and bio-fertilizers, which are biological sources of plant nutrients. Fertilizer should be applied at the proper time to minimize loss of nutrient particularly N and to maintain adequate supply of fertilizer nutrients when plants need them to ensure profitable yield. If the crop absorbs high proportion of nutrients added as fertilizer efficiency automatically increases. This means that fertilizer efficiency can be increased by getting higher yields with the same amount of nutrient absorbed by the plant. There are two kinds of fertilizers:
  - **Organic fertilizers** or farm manures refer to composts, crop residues, animal manures, green manures, and other municipal or farm waste which supply nutrients and improve soil physical conditions. Organic fertilizers are added to the soil in large
    quantities to meet nutrient demands of crops. The use of organic fertilizers is a vital component of integrated nutrient cycling systems.
  - **Inorganic fertilizers** is comprised of synthetic, artificial ingredients manufactured and ready to use in plants. Similar to the organic fertilizer, this fertilizer supplies the nutrients necessary to grow plants.

- **Compost** is a mixture of decayed organic materials decomposed by micro-organisms in a warm, moist, and aerobic environment, releasing nutrients into readily available forms for plant use.

**MATERIALS NEEDED**

- Pictures
- Steps in making compost
- Scoring Rubric

**PRESENTATION OF LESSON**

**A. Pre-Activities**

**1. Prayer**

**2. Checking of Attendance**

**3. Review**

Ask the following questions to the students:

a. Who among you here are the children of a farmer?
b. Have you ever experienced planting?
c. What is the importance of transplanting?
d. Why do we need to transplant seedlings?

**B. ACTIVITY**:

1. Group the students into five. Present samples of fertilizers.
2. Let them classify and identify the fertilizers as organic or inorganic fertilizer.

- See APPENDIX A

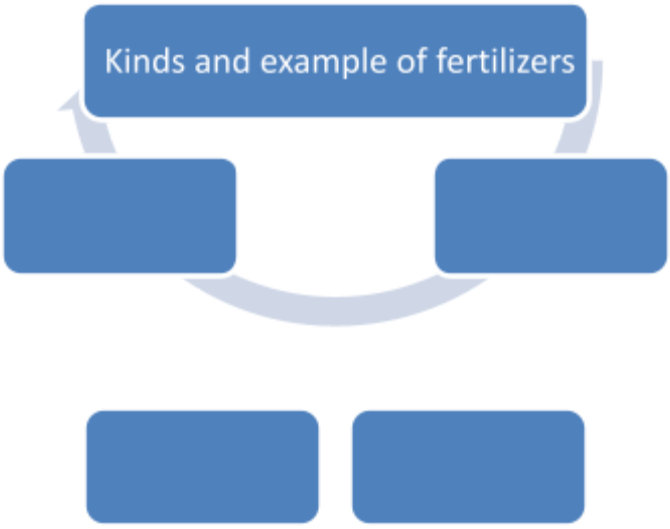
3.

**C. ANALYSIS**: Let the students answer the following questions:

1. What are fertilizers?
2. What are the kinds of fertilizers?
3. What are the plant food elements?
4. What are methods of fertilizer application?
5. What are the methods of determining soil fertility?
6. What is composting?
7. What are the three ways of making compost?
8. What are the steps in making compost?

**D. ABSTRACTION:**

- Let the students complete the graphic organizer below.




**E. APPLICATION: (Group Activity)**

- Divide the class into three groups. Let them make a compost by following the three methods.

**EVALUATION:**

- The output of the students will serve as their evaluation.

**ASSIGNMENT:**

- Interview at least two farmers on what kind of fertilizers they commonly used.