

MINISTRY OF EDUCATION
SECONDARY ENGAGEMENT PROGRAMME
SEPTEMBER 2020

GRADE: 8
Science

SUBJECT: Agricultural

WEEK 1

Lesson # 1

Topic: Principles and Practices of Cultivation

Sub-Topic: Factors to be considered in the cultivation of crops.

Objectives

Students will:

- ❖ outline the sequential steps involved in crop cultivation correctly.
- ❖ discuss without hesitation the factors that are considered when selecting a crop.

Content

Sequential Steps in Crop Cultivation

- ❖ Selection of crops
- ❖ Land preparation
- ❖ Propagation of crops
- ❖ Care and maintenance
- ❖ Harvesting and marketing

Factors that influences the selection of crops

Climate

- ❖ Is the average of rainfall and temperature found in a particular area.
- ❖ It is the most important limiting factor in the production of crops.
- ❖ The amount and distribution of rainfall throughout a year is very important.

- ❖ One area may get over 70-80% of total rainfall for the first 3mths and the rest of the year is dry.
- ❖ In such a situation the farmer must select the types of crops that will mature within the short period when there is moisture.
- ❖ Long duration crops, like sugar cane cannot be grown unless it is supplemented with irrigation water.
- ❖ Temperature and rainfall also influence the quality of the fruit.
- ❖ Under low rainfall and high temperatures, fruits like pineapples, mangoes and citrus are much sweeter.



Soil Type

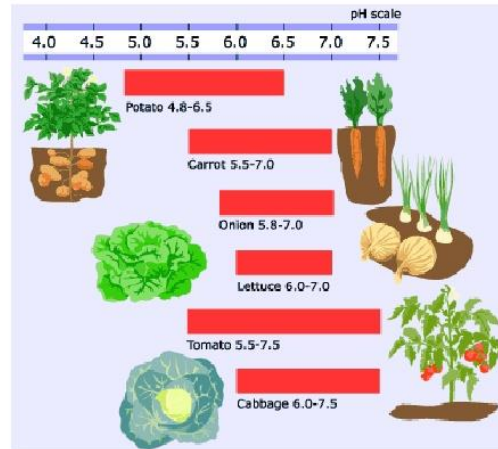
- ❖ Soil characteristics is an important factor in selecting specific crops.
- ❖ The selection of the right type of soil best suited for the crop is important.
- ❖ Different crops require different type of soil to grow, for example, rice and sugarcane require a clayey soil type which retains moisture well while peanuts and cassava require loose, friable sandy soils.



Soil pH

- ❖ Most crops prefer a pH range of 4.5 to 6, for example, sugarcane can tolerate very acid soils especially with good drainage while crop like coconut can tolerate and grow successfully on sandy alkaline soils.

Do plant roots really care about the H⁺ concentration in soil?



Labour and Capital

- ❖ Based on the availability of labour, the farmer may choose to grow crops which need either intensive or extensive care.
- ❖ Cash crops such as pepper, potatoes and tomatoes require more labour inputs like finer land preparation, fertilizer, pesticides, irrigation water to care for the plants.
- ❖ On the other hand, crops like mango, citrus, cotton and cassava do not need much care and inputs.
- ❖ Therefore, the farmer may select his crop based on land, labour and capital resources available.

Manual Labour on a Farm



Transport and marketing facilities

- ❖ Another factor that needs consideration in selecting of crops is a market for the produce.
- ❖ If there is no market in the vicinity and transportation to outlet centers is difficult and expensive, it will not be wise to select crops that are easily perishable.
- ❖ Instead, it is better to choose crops that are high-priced and can withstand storage well and offset the high transportation cost.

Transporting of Crops



Socio-economic factors

- ❖ Factors such as consumer preference, market demand for the produce, financial resources available for recurrent expenditure determines the selection of crops to be grown in an area.

Review

Answer the following questions

1. Selection of crops, care, and maintenance, _____ and _____ are all sequential steps involved in cultivating a crop.
2. Consumer preference, financial resources available and market demand are all _____ factors to be considered in selecting a crop.
3. Name 2 crops that require a lot of care and input for cultivation.
4. Why is it important for a farmer to consider his capital and land resources before selecting a crop to cultivate?
5. Why is climate a critical factor for crop production in Guyana?
6. Farmer James would like to plant rice, advise Farmers what type of soil is preferable for rice cultivation, giving 2 reasons.

Reference

1. Weever, et al (1993), Agricultural Science for Secondary Schools in Guyana, BK 2, Ministry of Education National Center for Educational Resource Development, Georgetown, Guyana. Chapter 1, pages 1-2.