

MINISTRY OF EDUCATION
SECONDARY ENGAGEMENT PROGRAMME
SEPTEMBER 2020

GRADE: 8
Science

SUBJECT: Agricultural

WEEK 5

Lesson # 1

Topic: Cultivation of crops

Sub-Topic: The Cultivation of Sweet Potato

Objectives

Students will:

- ❖ state the origin and distribution of sweet potato correctly.
- ❖ discuss without hesitation the economic importance of sweet potato.
- ❖ identify several varieties of sweet potato grown in Guyana and the Caribbean accurately.
- ❖ discuss planting materials, soil and climate and land preparation activities correctly.

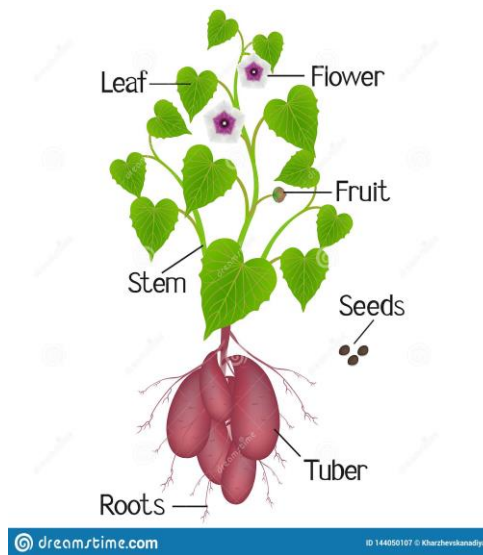
Content

Botanical name: *Ipomoea batatas*

Family: *Convolvulaceae*

Origin and Distribution

- ❖ the sweet potato is believed to be native of Central and South America.
- ❖ It is now grown extensively throughout the tropics and sub-tropics.
- ❖ The best growth is where the average is 24C or over.
- ❖ Guyana is one of the tropical countries in which sweet potato is cultivated.
- ❖ The Regions of highest production in Guyana, are Regions 3, 4, and 9, but it is also grown in Regions 2, 5 and 6.



Economic Importance

- ❖ The edible tubers are eaten boiled, baked or fried in oil or curried.
- ❖ They may be candied with syrup or used as a puree.
- ❖ The tubers are sliced into pieces and dehydrated to produce flour.
- ❖ The flour is used in the preparation of biscuits, cakes, and puddings.
- ❖ The tubers are rich in starch and yellow fleshed and pink fleshed varieties contain appreciable quantities of vitamin A and minerals like calcium.
- ❖ Sweet potatoes are also fed to livestock.
- ❖ The tender tips and leaves are used as pot-herb in Africa, Indonesia and the Philippines.
- ❖ The leaves and vines are widely used as fodder for livestock.

Foods made from Cabbage



Boiled Sweet Potato



Puree Sweet Potato Biscuit

Baked Sweet Potato



Curried Sweet Potato

Fried Sweet Potato



Sweet Potato



Sweet Potato Cake



Sweet Potato Pudding



Sweet Potato Salad

Soil and Climate

- ❖ Sweet potato could grow on a wide range of soils but well drained sandy loam with clayey sub-soil is best.
- ❖ On extraordinarily rich soils the crop produces too much vine at the expense of tubers.
- ❖ On heavy clay soils the roots are likely to be rough and irregular in shape.
- ❖ Noticeably light deep soil tends to produce long slender roots.
- ❖ The crop is particularly adapted to newly cleared land such as those found in our riverain areas.

- ❖ Desired pH is between 5.2-6.7.
- ❖ Sweet potato needs a warm climate.
- ❖ It grows best at an average temperature of 24°C.
- ❖ In high rainfall areas they are often planted at the end of the rainy season because they are relevant drought resistant.

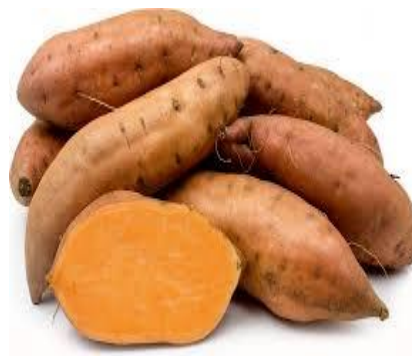
Varieties of Sweet Potatoes

- ❖ Several varieties are grown in the Caribbean.
- ❖ Some of the varieties have tubers with white skin and white flesh, while others have a pink skin and a white flesh.
- ❖ The flesh of tubers of some varieties is dry and powdery and of others, moist and soft when cooked.
- ❖ Varieties recommended to be grown in Guyana are S-128. CHS-6. T67, Black Rock, Strong Man, Viola and White Lady.

Varieties of Sweet Potato



Purple



Orange



White

Planting Material

- ❖ When selecting planting materials make sure they are from high yielding varieties.
- ❖ Generally, in Guyana, apical pieces, or mid portions of vines (slips) from one crop are used immediately after harvest for planting of the next crop.
- ❖ It is not advisable to continue successive planting with cutting from the previous crop for many seasons as there is steady deterioration in tuber size and yield.

- ❖ After every 3-4 seasons it is best to plant a nursey with medium sized tubers to obtain fresh slips.



Sweet Potato Slips

Video on Making Potato Slips-

<https://www.youtube.com/watch?v=35dp5iS8u7M>

Land Preparation and Planting

- ❖ Land preparation should be deep enough to accommodate the sweet potato tubers.
- ❖ Since this crop cannot withstand waterlogged conditions, there must be adequate drainage.
- ❖ The soil should be ploughed and harrowed, and adequate drains made. For lighter soils flat planting can be done but heavier soils should be ridged to facilitate drainage.
- ❖ Planting material for sweet potato is the slip (stem) of mature plants. The apical portion of the stem should be used.
- ❖ This apical stem cuttings should be about 25 cm long.
- ❖ In order to control pests during the initial stages of growth, planting material should be treated by soaking in an insecticidal solution for approximately ten minutes.
- ❖ The insecticides recommended are Admire at a rate of 1ml / L of water or Vydate at a rate of 2ml/l of water.
- ❖ Ridges should be 0.75 m apart and cuttings should be planted 0.3m apart.

Review

1. What is the botanical and family name for sweet potato?
2. Write a paragraph describing land preparation and planting of sweet potato.
3. Explain the economic importance of sweet potato to a food catering service in your community.
4. In Guyana, several varieties of sweet potato are cultivated, Identify 5 varieties of sweet potato.
5. How would you select planting materials for sweet potato?

References

Book

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 2, pages 48-50.

Internet Sources

1. <http://agriculture.gov.gy/wp-content/uploads/2016/01/sweet-potato.pdf>
2. <https://www.youtube.com/watch?v=35dp5iS8u7M>