Ministry of Education
Curriculum Planning and Development Division

Level: CSEC

Subject Area: Agricultural Science

SECTION B: CROP PRODUCTION

5. Crop management

Specific objective(s):

5.1 Cultivate a fruit, root, and leaf crop;

Fruit crop – for example, bean, tomato, **sweet pepper**, hot pepper, cucumber, ochro.

SBA Skills:

 # 6. Demonstrate land preparation techniques:

(a) land clearing; (b) primary and secondary tillage; (c) drain formation; and, (d) ridges and furrows.

#11. Transplanting and proper spacing.

#12. Demonstrate cultural practices associated with crop production:

(a) moulding; (b) mulching; (c) staking; (d) pruning; **(e) irrigating; (f) weed control; and, (g) pests and diseases control.**

Crop Management

Cultivating A Fruit Crop:
Sweet Pepper

How To Grow Sweet Pepper

Capsicum annum var. Bell Pepper

Objectives

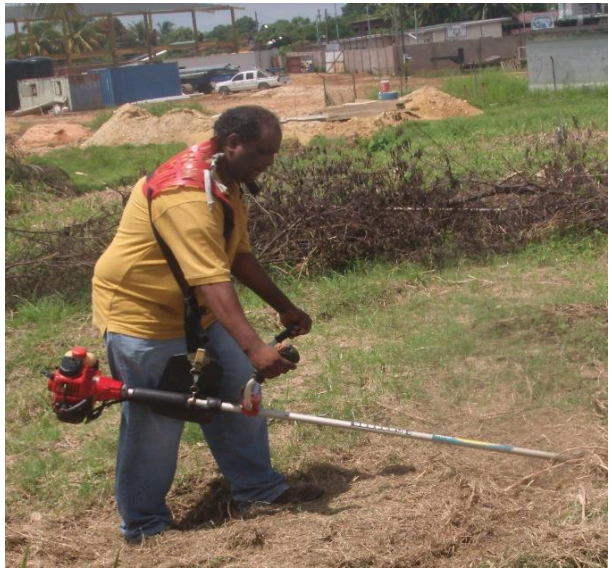
Explain the cultivation of **Sweet Pepper** under the following headings:

1. Land preparation
2. Planting and Spacing requirements
3. Cultural practices:
    1. Irrigation
    2. Weed control
    3. Moulding
    4. Pest Control
    5. Disease Control
4. Fertilizer Application
5. Harvesting and Preparation for market

Land Preparation- Land Clearing

- Remove Weeds and crops residues either by:
  - Manually using a cutlass
  - Mechanically using a mechanical brush cutter or weed wacker
  - Chemically using weedicides/herbicides

Manual weed control using a cutlass



Mechanical weed control using a mechanical brush cutter

Chemical weed control using weedicide/ herbicide

Land Preparation- Tillage

- PRIMARY TILLAGE
  - Break up soil into large clumps using a garden fork
- SECONDARY TILLAGE
  - Refine soil into a fine tilth, either manually using rakes and hoes or mechanically using a mechanical rotovator (rototiller)
  - At this stage, well-rotted pen manure can be incorporated into the soil.

Primary tillage using a garden fork

Secondary tillage using a rototiller

Land Preparation- Drain and Bed Formation

- Using a spade, make drains 30 cm wide and form raised beds approximately 1m x 5m.

Land Preparation- Prepared Bed

Planting material and recommended spacing

- Transplant 2 to 3 week old, hardened sweet pepper seedlings
- Spacing:
  - Within row spacing = 60 cm to 90cm apart
  - Between row spacing = 60cm to 90cm apart

Drainage and Irrigation

Soils need to be well drained and moisture levels maintained close to field capacity.

- Irrigation
  - Water regularly as needed throughout the growing season, manually using watering can. Automated irrigation systems can also be used e.g. overhead sprinkler, drip irrigation
  - Ensure that the soil is moistened thoroughly when watering

Using a watering can to irrigate crop

Using a overhead irrigation to irrigate crop

Cultural Practices – Weed Control

- Weeds can be controlled by:
  - Hand pulling
  - Apply mulch to suppress weed growth
  - Using a Selective Herbicide to chemically control weeds

Cultural Practices – Moulding

- Place the hoe out side the leaf drip area of the plant and gently pull soil around the plant.
- Benefits of Moulding:
  - Removes weeds
  - Breaks up any surface crust allowing more water and fertilizers to reach the roots.

Application of Inorganic Fertilizers

- The recommended rates for mineral fertilizers is
  - 400 – 600 kg NPK/ha in a 4:1:3 N:P:K proportion
- Fertilizer application can be scheduled as follows:
  - 1st application (basal application)
    - 1/3 the total requirement of NPK (170kg/ha) broadcast evenly over the field during bed formation.
  - 2nd application (after transplanting)
    - Can be fertigated with a water soluble fertilizer e.g. Nutrex @ 2.5 L/ha
  - 3rd application
    - Apply the remaining 2/3 of the required NPK fertilizer (340 kg/ha) as a side dressing at the appearance of the first flower buds

Pest Control e.g. Mites and White flies

- Mites:
  - Use an insecticide e.g. Cascade @ 1-2 tsp/gal every 5 days
    - Start immediately after transplanting
  - Use Torque between Cascade sprays to control adult stages
- Whiteflies, Thrips, Aphids
  - Use an insecticide e.g. Admire @ 4-5 tsp/gal 1-2 weeks after transplanting to provide control during vegetative growth

Source: https://chilli-seedz.com/15-2/chilli-pests/

Disease Control e.g. Bacterial Leaf Spot and *Phytophthora* Root Rot

- During the rainy season both Bacterial Leaf Spot and *Phytophthora* can be a problem. A copper based fungicide can be used to control these organisms
  - Bacterial spot – use Mankocide @ 2-4 tbsp/gal every 5-7 days
  - Phytophthora Root Rot - Drench root area with Banrot @ 2tsp/gal

Source: https://ag.umass.edu/greenhouse-floriculture/photos/pepper-bacterial-leaf-spot-xanthomonas-campestris

Harvesting and Preparation for Market

- Usually 3 months after transplanting, the peppers are ready for harvesting
- The harvesting period continues for 3-4 months
- Readiness of fruits for harvest
  - Fruits should be mature, firm, shiny and vary in colour from green to yellow to orange to red
- Harvest fruits by cutting off fruits with stems attached. Harvest early in the morning and avoid picking during rainy conditions
- Place harvested fruits in well-ventilated baskets and carry immediately to a shady area
- Discard diseased and blemished fruits
- Gently wipe peppers to remove soil and stains.
- Do not over pack storage containers to avoid crushing the peppers
- Store under cool/refrigerated conditions

EVALUATION

1. How are primary and secondary tillage carried out when preparing the land to cultivate sweet peppers?
2. What are the recommended rates for mineral fertilizers when cultivating sweet peppers?
3. List 2 benefits of moulding
4. Describe how sweet peppers are harvested and prepared for market

ANSWERS

1. How are primary and secondary tillage carried out when preparing the land to cultivate sweet peppers?

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ANSWERS

3. List 2 benefits of moulding

1. Removes weeds

2. Breaks up any surface crust allowing more water and fertilizers to reach the roots.

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