

## **PRODUCTION GUIDELINES FOR CABBAGE**

### **1. ECOLOGICAL CONSIDERATIONS**

#### a. Temperature

- Performs best in cool conditions 16 degrees Celsius to 20 degrees Celsius
- Head formation reduced at temperatures higher than 25 degrees Celsius

#### b. Rainfall

- High water requirement throughout growth period
- Optimal rainfall 1,500mm per year
- Irrigation required in dry areas

#### c. Altitude

- Can grow at elevations as low as 800 meters above sea level to elevations 2,200 meters above sea level

### **VARIETIES:**

Some commercial varieties include:

- Gloria F1
- Victoria F1
- Riana F1
- Pruktor F1
- Amigo F1
- Globe master F1
- Blue dynasty F1
- Green challenger F1
- Copenhagen market
- Star

### **2. SITE SELECTION**

#### a. Soil type and analysis

- Rich in organic matter
- Well drained
- pH levels between 6.0-6.5
- Soils rich in organic matter and well drained
- Soil analysis recommended for accurate fertilization
- Select field not previously used for cabbage, sukumawiki, cauliflower or broccoli

b. Water proximity

- Site should be close to source of water where irrigation is needed

c. Topography

- Level ground is ideal but sloped land is sufficient as long as the contour rule is followed

**3. CROP PLANNING**

a. Farm layout

- Important in order to plan rotation, installation of infrastructure and accessibility

b. Crop rotation

- Improves soil fertility and controls soil-borne disease
- Do not rotate cabbages with vegetables in the same family as sukumawiki, broccoli and cauliflower
- Rotate with potatoes, onions, maize, carrots and spinach

c. Record keeping

- It is important to keep records for analysis of crop profitability
- System should be designed early to ensure accurate and timely collection of relevant information

d. Marketing

- It is very important to keep in mind where the crop is likely to be sold, possible prices and quantities

**4. NURSERY OPERATIONS**

a. Area selection

- Establish nursery in area free of soil-borne disease
- Near water source
- Protected from livestock and birds

b. Preparation

- Raised beds 1 meter wide with convenient lengths are recommended for wet areas with heavy soils
- Sunken beds are ideal for dry areas or during dry season
- Prepare the soil to a fine tilth, breaking all clods and removing stones and brush
- Incorporate well rotten farmyard manure and DAP or TSP fertilizer depending on soil type

c. Sowing

- Before sowing, the media should be thoroughly watered
- Sow seeds thinly in drills spaced 15 centimeters apart or in seed trays
- Cover lightly with soil and apply mulch, or cover with Hessian cloth and use shade net

d. Nursery Management

- Shading: use shade nets, dry grass or leaves
- Check nursery twice a day for moisture levels and apply water as is needed with a watering rose sieve
- Remove mulch or Hessian cloth immediately after germination
- Maintain shade until last week of crop, or depending on the crop response, you can decide to remove the shade completely
- Scout for pests and disease and control with appropriate pesticides — read labels carefully
- Common nursery problems include cutworms — cut seedlings at base-control with malathion
- Aphids: attack growing tips and cause stunting-spray karate, fastac, pirimor.
- Damping off disease thrives in poorly watered seed beds that remain wet during the night. Drench soils with fungicides such as ridomil or benovap and apply water in early afternoon
- As seedlings get ready for planting, reduce amount of water to once in the last week before transplanting

**5. MAIN SITE PREPARATION**

a. Ploughing

- The field should be ploughed 2-3 weeks in advance at least 8 inches deeper

b. Harrowing

- Harrow the field 2-3 weeks later after ploughing
- Prepare soil to a fine tilth

c. Bed making

- Raised beds recommended for root development and proper drainage
- Bed width of 1 meter and a convenient length not exceeding 100 meters and a height of 15 centimeters
- Incorporate well rotten farm yard manure.

## **6. TRANSPLANTING**

### a. Timing

- Seedlings ready for transplanting after 4-6 weeks in the nursery, depending on temperatures
- Best time for planting is late in the evening when sun is cool or on a cloudy day
- Wet the seedlings an hour before transplanting.

### b. Depth

- Plant to the same depth as in the nursery

### c. Spacing

- Varies with varieties: 60cm x 60cm for large-headed varieties, 60cm x 45cm for medium sized and 30cm x 30cm for small heads

## **7. CROP MANAGEMENT**

### a. Feeding/Fertilization.

- Apply DAP or TSP fertilizer during transplanting (1 teaspoonful/hole)
- Top dress crop two weeks after transplanting with 1 teaspoonful of CAN per plant
- Apply a second topdressing at same rate when leaves begin to fold
- Too much CAN results in loose heads or no head formation

**NB: Soil analysis recommended**

### b. Manuring

- Necessary to improve soil structure and to slowly provide extra nutrients
- Done at planting
- Use 10 to 30 tonnes per hectare

### c. Weeding

- Keep fields free of weeds to reduce competition for nutrients, light and space
- Also to reduce pests and disease infestation

### d. Mulching

- Increases organic matter in the soil
- Conserves soil moisture
- Prevents soil erosion
- Suppresses splashing of rain or irrigation water and spread of diseases
- Good during dry periods

## **8. HARVESTING**

### a. Stage

- Harvest when heads are firm and fully formed, preferably when prices are good
- Maturity period ranges from 2 to 4 months depending on variety and location
- Harvest with four wrapper leaves to protect the head and to keep cabbage fresh

### b. Specifications

- This will be guided by the type of market and thus will range from small to large cabbage heads

### c. Post harvest handling

- Handle the heads carefully to avoid bruises
- Keep produce under shade

## **9. GROSS MARGIN ANALYSIS**

### a. Capital costs

- Note all the capital expenses incurred

### b. Yield

- Record all yield data

### c. Cost of production

- Record all the direct costs incurred

### d. Profits and losses

- Profit/loss = income (yield x sale price) – expenses (production costs)