

## **PRODUCTION GUIDELINES FOR TRAINING OF TOMATOES**

### **1. ECOLOGICAL CONSIDERATIONS**

#### **a. Temperature**

- Performs well in cool to warm conditions
- Temperature ranges are from 20 degrees Celsius to 25 degrees Celsius and 13 degrees Celsius to 17 degrees Celsius
- Generally tolerates higher temperatures rather than lower ones

#### **b. Rainfall**

- Best grown using irrigation
- But an ideal rainfall requirement is 600mm during production period
- During the first month after transplanting, crop should not face any drought

#### **c. Altitude**

- 2,000 meters above sea level

### **2. SITE SELECTION**

#### **a. Soil type and analysis**

- Well draining soils and soils that aren't too heavy are suitable
- pH levels between 5 and 7.5 will do

#### **b. Water proximity**

- Ideally, site will be near water source

#### **c. Topography**

- Ideal topography is where land is relatively level
- But sloping land also can be used bearing in mind contours

### **3. CROP PLANNING**

#### **a. Farm layout**

- Plan land use to allow for crop mix that will enable rotation

#### **b. Crop rotation.**

- Very necessary to avoid disease build up
- Rotate with crops that do not belong in the Solanacea family

c. Record keeping

- A very important exercise or tool that needs to be used by all farmers. Any activity undertaken should be recorded
- Should be designed early to ensure timely and proper collection of relevant data

d. Marketing

- Necessary to know where the product will be sold and the likely price

**4. NURSERY OPERATIONS**

a. Area selection

- Where possible, select virgin land for the nursery
- Site should be close to water source
- Should be protected from interference

b. Preparation

- The area should be thoroughly ploughed two weeks in advance to a depth of at least 15 centimeters
- Solarization treatment is recommended
- The soil should then be prepared to a fine tilth
- Remove all trash and clods
- Incorporate well cured manure and DAP
- Some types of soils will require addition of sand (thus soil:sand:organic matter mix)
- Measure a bed of 1 meter wide and of suitable length
- The modern nursery type allows for the use of seedling plugs or trays to substitute for beds
- When trays are used, make sure ground or bench is level

c. Sowing

- Before sowing in the nursery, thoroughly wet the soil using a rose sieve
- Depth of seed sowing depends on size of seed
- In beds, drill seeds in lines thinly, 15 centimeters apart
- In the plugs, put one seed per hole
- Then cover with a layer of media

d. Management

- After sowing the beds should be covered with either a Hessian cloth or grass mulch
- Then shade should be provided on top using either shade net or any other appropriate material
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- Watering is done daily in the morning and in the evening using a rose sieve. But it is always advisable to check the moisture content before irrigating
- Germination is likely from the 6<sup>th</sup> day onward. Once germination starts, remove the cloth or mulch to be left with a shade of 50 percent to 70 percent
- Watering pattern remains the same
- In the last week before transplanting, remove all shade, reduce watering frequency and apply root guard

## **5. MAIN SITE PREPARATION**

### a. Ploughing

- Disc plough to 8 inches deep or more 2-3 weeks before planting using either a jembe or an animal or tractor-drawn plough

### b. Harrowing

- Should be done to achieve a fine surface 2-3 weeks after ploughing

### c. Beds

- Make beds 1 meter x desired length, depending on the length of the field

### d. Spacing

- For processing, tomatoes can be spaced at 60-70cm x 40cm
- For fresh markets can vary from 90-60cm x 30cm or even closer spacing will also be sufficient

### e. Starter solutions

- There are various starter solutions available that can be used at planting time to enhance startup. Among them are rootguard, kickstart, etc.

## **6. TRANSPLANTING**

### a. Timing

- At 4 weeks old, begin the hardening process (reduce watering frequency, remove shade etc.). Also start application of root guard
- Before transplanting, wet the nursery an hour in advance
- Transplant in the evening to reduce shock; plants should be 6 weeks old

### b. Depth

- The seedling should be put at the same level as at the nursery

## **7. CROP MANAGEMENT**

### a. Feeding/Fertilization

- At planting, phosphorus should be added and select fertilizer suitable for the soil acidity
- Top dressing should follow with a nitrogen fertilizer 3 weeks after planting
- Follow with further top dressing at just about flowering

b. Manuring

- Advisable to incorporate manure during land preparation or at planting time. Aim for 30 tonnes per hectare

c. Weeding

- Ensure field is weed free, thus regular weeding necessary

d. Pest and Disease

- Scouting is important here
- Common tomato pests are red spider mites, American bollworm, nematodes, aphides and white flies, in that order
- Control pests through regular scouting and correct selection of pesticides
- The main tomato diseases are blights (early and late), bacterial wilt, and blossom end rot which is more of a physiological disorder
- Control disease through proper selection and utilization of pesticides

e. Mulching

- Helps to reduce weed pressure, helps keep moisture loss low and helps maintain soil fertility

## **8. HARVESTING**

a. Stage

- 2 ½ - 3 months after transplanting, tomatoes will be ready for picking

b. Specifications

- Would be determined by the type of market
- Should be fully ripe for home consumption
- Should be mature green stage or broken stage (greenish-yellow) for local market

c. Postharvest handling

- Tomatoes should be handled with care to avoid bruising
- Tomatoes should be packed in wooden crates or bread crates with a standard weight to avoid bruising

## **9. GROSS MARGIN ANALYSIS**

a. Capital costs

- Note all the capital expenses incurred

b. Yield

- Record all yield data collected from field

c. Cost of production

- Any cost incurred during the production process should be recorded

d. Profits and losses

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