

# Step-by-Step Process for Planting Yam to Harvesting

## 1. Land Preparation

- **Clear the Land:** Remove any existing crops, weeds, and debris from the land. This ensures that the soil is prepared for planting.
- **Tillage:** Use a plow or hoe to break the soil to a depth of about 15-30 cm. This allows the yam tubers to grow properly.
- **Mound Formation:** After tilling, form raised mounds or ridges (called "*heaps*") about 15-30 cm high and 1-1.5 meters apart. Mounding improves drainage and provides space for tuber expansion.

## 2. Selection of Yam Seedlings (Setts)

- **Seed Selection:** Choose healthy and disease-free yam tubers for planting. Ideal seed tubers should weigh between 0.5 to 1 kg each.
- **Preparation of Setts:** Cut the tubers into pieces (setts) ensuring each piece has at least one eye (bud) to sprout. Let the cut pieces cure for 1-2 days to reduce the risk of rot.

## 3. Planting

- **Planting Depth:** Plant the yam setts about 5-10 cm deep into the mound with the eye facing up. Space the setts about 90-120 cm apart along the mound.
- **Row Spacing:** If planting multiple rows, leave about 1 meter between each row to allow for proper plant growth.

## 4. Watering and Irrigation

- **Initial Watering:** Water the planted setts immediately after planting to encourage sprouting.
- **Continuous Watering:** Yam requires consistent moisture, especially during the early stages of growth. Irrigation is recommended if rainfall is insufficient.

## 5. Fertilization

- **Organic Manure:** Apply well-rotted compost or manure to the soil to improve fertility, especially if the soil is not rich in nutrients.
- **Chemical Fertilizer:** Apply balanced fertilizers (NPK) 2-3 months after planting. This helps to boost plant growth and tuber development.

## 6. Weed Control

- **Manual Weeding:** Regular weeding is necessary to prevent competition for nutrients and space. Weed the farm every 2-3 weeks during the growing period.

- **Mulching:** Applying mulch can also help reduce weed growth and retain moisture in the soil.

## 7. Pest and Disease Control

- **Common Pests:** Yam can be attacked by pests like yam beetles, termites, and caterpillars. Regular pesticide application or organic pest control methods are necessary.
- **Diseases:** The common yam diseases include yam mosaic virus, nematodes, and fungal infections. Use disease-resistant varieties and crop rotation to prevent these.

## 8. Staking

- **Stake the Vines:** As yams grow, they will send out long vines that need support. Install stakes or poles to guide the vines upwards and prevent them from being smothered by weeds or other plants.

## 9. Harvesting

- **Timing:** Yams are ready for harvest between 6-12 months, depending on the variety and environmental conditions.
- **Harvesting Method:** Use a spade or hoe to gently dig around the base of the mound to expose the yam tubers without damaging them. Harvest in the dry season to avoid rotting due to excessive moisture.

## Best Conditions and Requirements for Yam Planting

1. **Soil Type:** Yam prefers well-drained, loamy soil rich in organic matter. Sandy loam and clay loam soils are ideal.
2. **Climate:** Yam grows best in tropical climates with temperatures between 25°C to 30°C. It requires a rainfall range of 1000-2000 mm annually.
3. **pH Level:** Soil pH should be between 5.5 and 6.5 for optimal growth.
4. **Land Preparation:** Proper soil aeration through tilling and mounding is essential for tuber expansion.
5. **Watering:** Ensure consistent moisture supply during the growing season, especially during the dry months.

## Possible Challenges in Yam Planting and Their Solutions

1. **Pests and Diseases:**
  - **Solution:** Use resistant varieties, apply pesticides as needed, and practice crop rotation to reduce the risk of pests and diseases.
2. **Weed Competition:**

- **Solution:** Regular manual weeding, mulching, or herbicide application can help control weeds.
- 3. **Poor Soil Fertility:**
  - **Solution:** Enrich the soil with compost or organic manure. Apply balanced fertilizers to ensure sufficient nutrient supply.
- 4. **Poor Rainfall:**
  - **Solution:** Irrigation systems can be implemented to provide consistent water, especially during dry seasons.
- 5. **Soil Erosion:**
  - **Solution:** Use erosion control techniques such as terracing and mulching.
- 6. **Tubers Rotting:**
  - **Solution:** Ensure proper harvesting timing, avoid waterlogging, and properly store harvested yams in a cool, dry place.

## **Derivatives of Yam to Farmers**

1. **Yam Tubers:** The primary product for food consumption and export.
2. **Yam Flour:** Processed into yam flour (*elubo*), which can be used to make pounded yam and other dishes.
3. **Yam Chips:** Dried and fried yam slices used as snacks.
4. **Yam Starch:** Extracted and used in the food and manufacturing industries.
5. **Yam Vine:** Can be used as animal feed or compost material.
6. **Yam Leaves:** Consumed as vegetables in some regions.

## **Value Chains in the Yam Business**

1. **Production:**
  - Planting, maintaining, and harvesting yams.
  - Proper processing and packaging for export.
2. **Processing:**
  - Production of yam flour, chips, starch, and other processed yam products.
  - Value-added products like yam-based snacks, flour, and confectioneries.
3. **Marketing and Distribution:**
  - Direct sales to local markets, supermarkets, or wholesalers.
  - Export to international markets.
4. **Storage and Preservation:**

- Post-harvest handling of yam to prevent spoilage.
- Storage solutions such as cold rooms for longer shelf life.

**5. Farm Inputs:**

- Selling of quality yam seedlings (setts), fertilizers, pesticides, and other farming tools.

**6. Consumption:**

- Domestic consumption and catering services (such as restaurants or local food businesses).

**7. Retail and Wholesale:**

- Retail outlets for yam-based products.
- Wholesalers who distribute products to larger markets or regions.

By tapping into these value chains, farmers can increase their income and sustainability from yam farming.