



**KENYA ACCELERATED VALUE CHAIN DEVELOPMENT PROGRAM (AVCD)
ROOT CROPS COMPONENT**

APICAL ROOTED CUTTINGS FOR SEED POTATO PRODUCTION

Planting and managing rooted potato cuttings

Rooted cuttings have the potential to transform potato seed systems. The rapid and high rate of multiplication will significantly contribute to reducing seed potato shortages. Each cutting produces 7 to 10 tubers, and up to 15+, which are multiplied a further season or two then the harvest is sold as seed. This is very high-quality seed, equivalent to basic or certified seed in seed certification systems. This means that the seed that farmers buy is extremely high quality and will produce high yielding crops, encouraging seed multipliers and farmers to keep coming back to buy more.

An apical rooted cutting is similar to a nursery -grown seedling (Fig. 1). Cuttings are produced from tissue culture plants in a screenhouse, and are clean and free of disease. Cuttings are planted in the field in slightly raised beds to produce high numbers of seed tubers. Watering cuttings until they are established is essential. Starting with 500 (10m x 5m) to 1,000 (10m x 10m) cuttings is recommended. This area can be watered with a watering can.



Fig.1

Land preparation

Cuttings are extremely high quality material coming from the screenhouse. Select a site where potato, tomato, eggplant, peppers or nightshade have not been planted for at least 6 seasons. Prepare land by marking the beds. Each bed is 50 cm wide with 50 cm between beds. Dig the soil 20-30 cm under the soil line and make a raised bed 3-5 cm height (Fig 2 & 3).

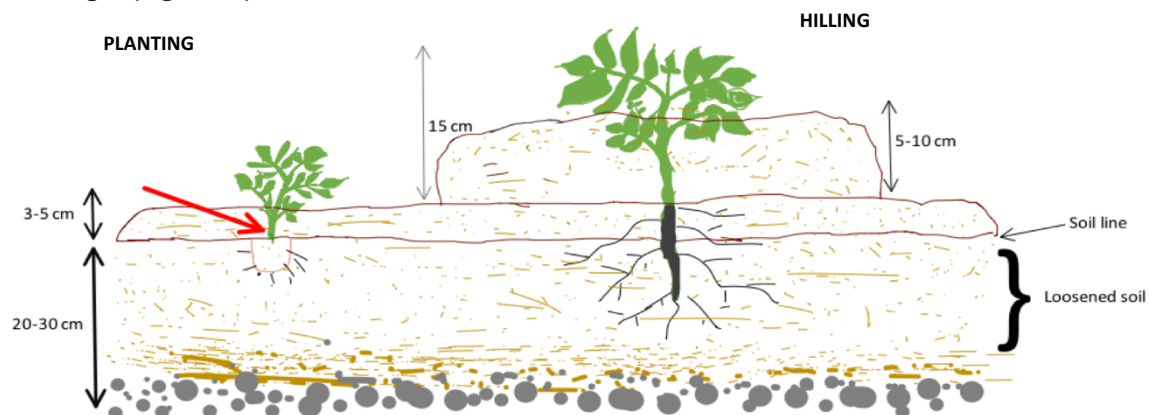


Fig.2

Plant rooted cuttings 3 rows per bed: 20 cm between rows and 25 cm between plants in a row (Fig.3). Plant each cutting with the stem line 2-3cm below the soil line, this mean that part of the stem will be buried about 3 cm (Figs. 1 and 2, red arrows).

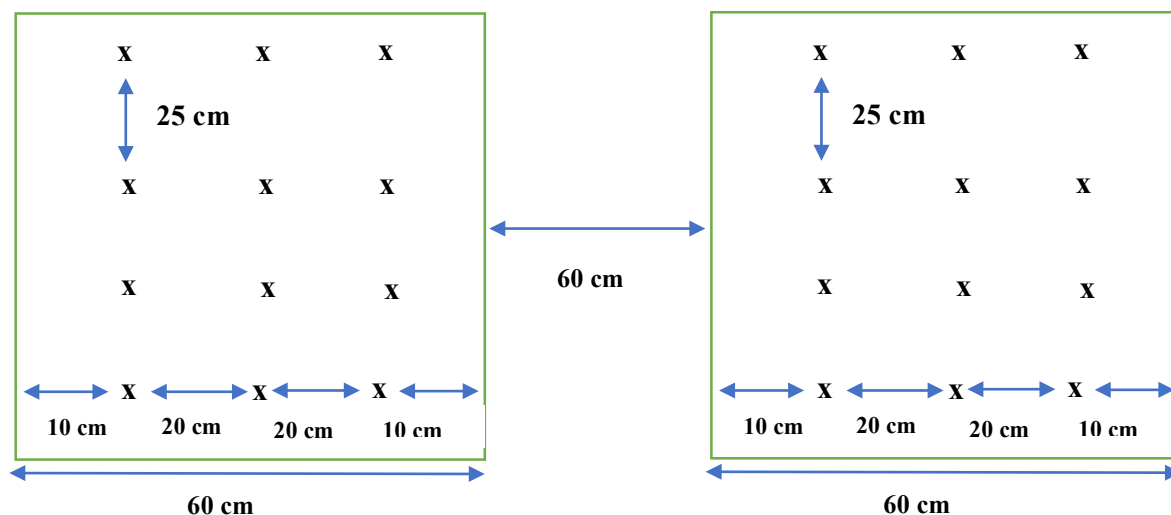


Fig.3

Cutworms

It is recommended to always treat the soil for cutworms at transplanting. Use insecticides to control cutworms immediately at transplanting and one week later, or as required. Examples: a.i. thiamethoxam (Actara 25WG, Medal 25WDG, Engeo 247SC) and a.i. alpha-cypermethrin (Bestox, TATA ALPHA 10 EC).

Cuttings need water until established

Keep cuttings well-watered until well established. This means watering twice a day right after planting reducing to once a day until the crop is established. Yield loss will be significant if the crop is not well watered until well established.



Hilling

When the plant is 15 cm high, hill to partially cover the plant, 5-10 cm (Fig. 2).

Crop Management

Care for the crop as you would your seed crop providing good fertilizer and managing diseases (refer to seed potato multiplier manual).

Harvest

As the crop matures, check tuber size. Once the majority of tubers are seed size (egg size), dehaulm the crop by cutting down all above ground plant matter – separating the plant from the tubers. Be sure to remove all plant matter from the field, leaving it lying around could bring disease to the tubers. For following seasons, check tuber size after the flowers drop and dehaulm as for seed crop. It is important to check tuber size when producing seed after the flowers drop, as some varieties the tubers get very big very fast, such as Unica.

Rooted potato cuttings are economical

Starting with 1,000 cuttings at an approximate cost of 15,000 KES, a seed multiplier is projected to produce 76 50-kg bags of seed potato after two seasons of multiplications (one year). Planting 1,000 cuttings requires 100 m² for the first season, then 0.20 ha (0.5 acres) for the second season. Compared to minitubers, where the same initial area of 100 m² is projected to produce 59 50-kg bags, profits from cuttings are 40% greater than those when starting with minitubers.