



National Agricultural Value Chain Development Project
Transferring from Subsistence to Commercial Farming

CERTIFIED SEED POTATO PRODUCTION





Introduction

Certified seed should meet the standards of the Kenya Plant Health Inspectorate Service (KEPHIS), the seed certification agency. Certified seed potato is an input in potato production (seed and ware) essential for producing a profitable crop. To produce seed potatoes, one must be a registered seed merchant or an out-grower of a licensed seed merchant. It is recommended that a seed grower undergoes seed potato production training by the Kenya Agricultural and Livestock Research Organization (KALRO), KEPHIS and the Ministry of Agriculture and Livestock Development

Steps in seed production

I. Field selection

DO NOT PLANT a seed crop near a ware crop or any other crop related to potato (as shown below)



Isolation distance in meters (Minimum) from ware crop

Breeders	Pre-basic	Basic	C1	C2
100	100	100	50	50

2. Preparation for planting

- Soil testing must be conducted by KEPHIS to test for Bacterial wilt and Potato Cyst Nematode before planting.
- Develop a rotational plan that ensures you do not produce seed potatoes in the same plot of land for four seasons.
- Select a potato variety that is suited for a specific region, market and or use.
- Buy basic seed from a registered seed merchant.

Seed quantities required per hectare are shown below

Seed size	Sprouts no. per tuber	50 kg bags required
1 (28-35)	4	14-16
2 (35-45)	4	18-20
3 (45-55)	5	24 -26

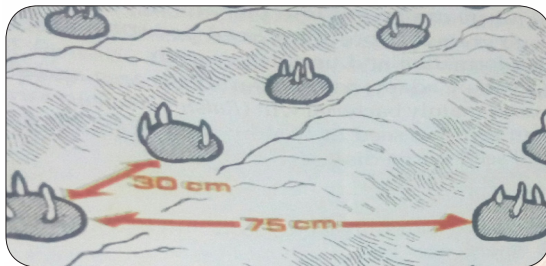


Sprouted potato seed

3. Field planting

- Plough the land at least 15 to 30 days before planting.
- Harrow to loosen soil to about 30 cm depth.
- Space furrows at 75 cm apart and tuber spacing can vary between 21 and 30 cm.
- Plant seed tubers that have broken dormancy and have at least 4 sprouts per tuber.

Note: Do not plant tubers that have not sprouted or over sprouted, shrunken or wrinkled



Row to row spacing of 75 cm and within row spacing of 30 cm





4. Fertilizers

Soil analysis should be done to determine the soil pH and nutrient status to guide fertilizer and manure use. This service is available at KALRO-Kabete (NARL) and several other KALRO centres.

- Apply recommended fertilizer/lime according to the soil test results.
- Ensure fertilizer is applied in the rows and mixed thoroughly with the soil to avoid direct contact of the tubers with the fertilizer as this may have a burning effect.

5. Seed certification

- Register the seed crop for inspection by KEPHIS immediately after planting by filling SR 5 form obtained from KEPHIS
- The SR 5 form must be accompanied by ALL the certification labels from the seed planted
- The seed producer meets the KEPHIS inspection charges
- The field crop must be inspected by KEPHIS at least three times before harvest

6. Crop management

- Weed after potatoes have germinated (1 ft. /30 cm high)
- Earth up or hill the potato twice; the initial one at 75% crop emergence and the second before flowering
- Scout for pests and diseases and control using fungicides and insecticides
- Remove/uproot off-types, mildly virus-infected plants to ensure a pure and healthy seed, as guided by KEPHIS during inspection

Standard for off types is shown below;

Off types of other cultivars; Maximum number per 100 plants				
Breeders	Pre basic	Basic	C1	C2
0	1	2	2	3

7. De-haulming (removing stem and leaves)

- De-haulming is done two weeks before harvesting
- Use hand tools (slashers or pangas) or manual uprooting to remove the haulms to allow the seed potato skin to harden
- Cover any exposed tubers with soil

NB: Farmer should not de-haulm until advised by KEPHIS

8. Pre-harvest inspection

- After de-haulming, KEPHIS samples 400 tubers per field per variety for bacterial wilt test

9. Harvesting

- Harvest two weeks after de-haulming

At harvest the desired size distribution is indicated in the following diagram: below



9. Sorting, grading and labelling

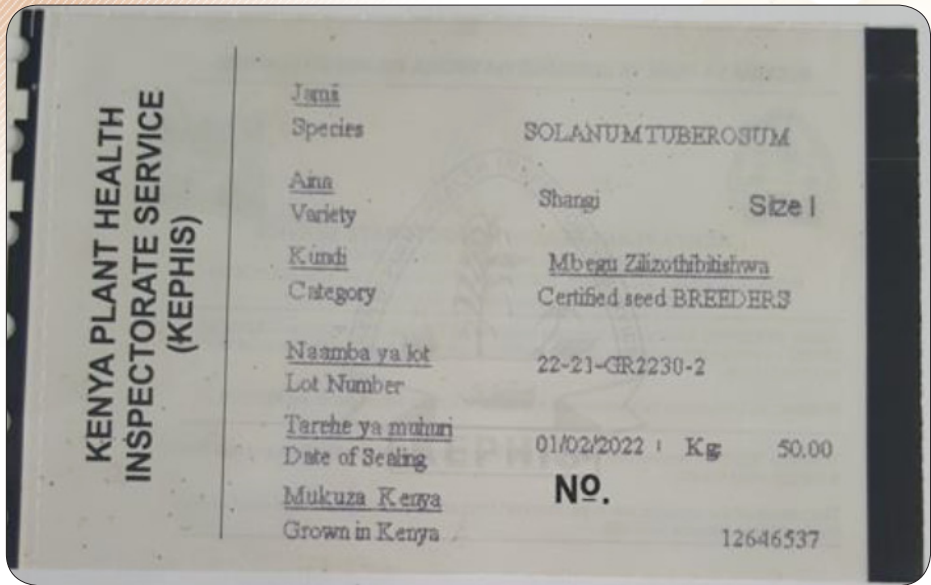
- Remove cut, rotten and malformed tubers
- Grade tubers according to KEPHIS seed size specification; 1= 28-35 mm, 2= 35-45 mm and 3= 45-55 mm
- Label each bag by variety for ease of identification

10. Post-harvest inspection

- Apply for Lot inspection (done to ensure that grading is done properly)
- Apply for certification labels
- Ensure each bag is sealed and has a label



Potato crop in the field



KEPHIS certification label for variety Shangi seed size I





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