3.9 m
100 tubes
45 m
Volunteers

1 m
400-600 kg of seed, sufficient to plant 4-5 acres

50 m
10,000 tubers

4,000-6,000 kg of seed, sufficient to plant 7-8 acres

Cuttings

Season 5
Season 4
Season 3
Season 2
Season 1
1. Site selection

Avoid:
- Shaded plots
- Water run-off from higher plots to avoid disease spread
- Clumps of soil
- Animal entry

Ensure:
- 5-8 hours of good sunlight
- At least 100 adult steps from other plots with ware potato or related crop (tomato, eggplant, tobacco, nightshade or other solanaceous crops) to avoid disease spread
- Loose textured, well-drained soil to allow good root and stolon development and tuberization
- Access to clean water until cuttings are well established

8. Harvesting

- Do first weeding only after the crop has established or at first hilling. Then keep the seed plot weed free
- Hilling is rounding ridges of soil on top of the potato plants to ensure stolons are covered and produce tubers rather than above-ground stems
- Hilling increases the number and quality of tubers and reduces their exposure to pests and sunlight. Exposure to sunlight turns tubers green
- The first hilling is done when the potato plant is 10-15 cm high (about 3 weeks after transplanting)
- For the second hilling, carry extra soil from elsewhere using a spade to avoid the cutting of the stolons
- Use hands, a wooden stick or a hoe to harvest. Be careful when using a hoe as this can damage the tubers

9. Storage and sprouting

- Grade the healthy-looking tubers per size
- Tubers smaller than 20 mm will be multiplied another round in a seed bed
- Tubers greater than 20 mm will be used next season for further multiplication in the field
- Gather and destroy harvest remnants like foliage, rotten tubers, etc., to keep the garden clean
- Use new bags to transport the seed tubers to the store
- The skin is hardened if it does not slip easily when wrapped between thumb and index finger

10. Planting tubers

- Seed potato tubers should have at least 3-6 sprouts, no longer than 25 mm, before planting
- Plant the sprouted tubers depending on their size

- Further standard seed potato producing practices apply

For further information, contact your supplier of rooted apical cuttings or nearest government extension officer

- Depending on the land area available, make a timely order of the quantity of rooted apical cuttings to be transplanted

- Harvest when it is not raining and when the soil is moist, but not wet. When soil is moist, potatoes are easier to pull out

- Weight and store only healthy seed potato tubers in a Diffused Light Store that can be made of locally available materials

- The skin is hardened if it does not slip easily when wrapped between thumb and index finger

- The first hilling is done when the potato plant is 10-15 cm high (about 3 weeks after transplanting)
- For the second hilling, carry extra soil from elsewhere using a spade to avoid the cutting of the stolons
- Cutting increases the risk for pest and disease infection
- Diseases
- Diseases better storage, transport and protection against post-harvest part) to stop tuber growth and to enable skin hardening for size (chicken egg size), dehaulm (destroy the above-ground stems (Lantana camara, above the tubers)
- Spread green banana leaves on the tubers to promote spouting
- Check and turn the tubers regularly and remove the rotting ones
- Monitor the presence of insects by using insect traps
- Check especially for sucking pests like aphids and chewing pests like potato tuber moth
- Dust Malathion or Actellic on the shelves, between and on top of the stored potatoes, to kill any larvae of the potato tuber moth

- If there is apical dominance (the development of only 1 sprout) pinch and remove it to encourage the other eyes to open and sprout

- Check the tuber size on a regular basis
- When at least 75% of the crop has reached the desirable size (chicken egg size), dehaulm (destroy the above-ground part) to stop tuber growth and to enable skin hardening for better storage, transport and protection against post-harvest diseases
- Dehaulm by spraying a contact herbicide: dehaulming by cutting increases the risk for pest and disease infection
- Leave the tubers in the soil for 10 to 14 days before harvesting

- Do first weeding only after the crop has established or at first hilling. Then keep the seed plot weed free
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2. Tool management

- All tools and footwear must be clean and disinfected to prevent the spread of diseases.
- To disinfect metal tools, use a panga to scrape off the dirt, then apply fire or soapy water.
- Work in the seed plot immediately after cleaning tools and boots.
- Then work in other plots after finishing work in the seed plot.
- Use separate sprayer for pest/disease management and for herbicides.

3. Seed bed preparation

- Proper seed bed preparation improves the condition of the soil, allowing the roots and tubers to develop well.
- Clear the plot by cutting and removing existing vegetation.
- Measure and demarcate the seed plot using a sisal string and wooden sticks: 3.9 m by 7.8 m for 100 rooted apical cuttings.
- When planting, demarcate the planting holes using a sisal string and a 30 cm wooden stick.
- Do not plant in full sun. Plant on cloudy days or in the late afternoon of a sunny day.
- Plant ¼ to ½ of the rooted apical cutting so that only the top foliage is above the ground.
- Compact the soil well around the base of the plantlet to ensure good contact between the roots and the soil.
- When planting in the dry season, plant each cutting in a depression to retain water and avoid run-off.
- When there is very hot sun or very heavy rains, protect the seed plot. Use a +/- 50% shade net or traditional nursery covering made from banana or eucalyptus leaves on 1.5 m wooden supporting poles.
- Depending on the weather, remove the shade net or nursery covering after 1-2 weeks when cuttings are well established (when growth is initiated, and new leaves appear).
- Shading for too long will reduce the strength of the cuttings.
- Optionally, place a signpost with the variety, spacing, number of cuttings and date of planting at each seed bed to ease monitoring.
- Draw a map of the seed plot in the record book with all relevant information in case the signpost writing fades.
- Record keeping is essential in professional and potato production.

4. Fertilizer application

- Chemical fertilizer, like NPK, can be used to adjust the soil fertility, but ideally application should be based on soil analysis and recommendations.
- Ensure equal distribution of NPK 14-23-14 on the seed beds (200 kg per acre or 50 kg per m²).
- Alternatively, apply a small amount of NPK in “palm of a hand” per plant in planting hole.
- Mix NPK well with the soil. Roots should not be in direct contact with NPK as this may burn them.
- Application of NPK is most effective when soil is moist applied dry.
- The main characteristics of a good cutting are:
  - 8-12 cm high from the collar (stem at the base of the growing medium), 10 cm in the optimal length.
  - Short internodes.
  - Strong collar and stem.
  - Well-developed roots, but no root bound (roots growing round and round because of too small container, as this halts plant growth).
  - Dark green leaves.
  - Well-watered.

- When planting, demarcate the planting holes using a sisal string and a 30 cm wooden stick.
- Do not plant in full sun. Plant on cloudy days or in the late afternoon of a sunny day.
- Plant ¼ to ½ of the rooted apical cutting so that only the top foliage is above the ground.
- Compact the soil well around the base of the plantlet to ensure good contact between the roots and the soil.
- The seed plot should be free of bacterial wilt.
- Most common diseases are late blight and bacterial wilt.
- Late blight, a fungal disease, infects the leaves, stems and tubers.
- The disease is high in cold and wet weather.
- Infected plants have brown spots within yellow halos (circles).
- Late blight is treated with chemicals. First spray a contact fungicide (Mancozeb), then alternate spraying contact and systemic (Ridomil) fungicides.
- Read well and respect the instructions on the chemicals’ packaging.
- Wear protective clothing when spraying.

- Plough the plot under the seed beds to a depth of 20-30 cm.
- Raise the seed beds up to 5-10 cm high to improve water drainage.
- Keep the cuttings well-watered after planting until they are well-established; yield loss will be significant if the crop is not well-watered.
- Depending on sun exposure and temperature, water the seed plot once or twice a day.
- Close monitoring is very important as there are no strict watering rules.

- Seed beds should run across the slope of sloping terrain, following its contour to reduce soil erosion.
- Use wooden supporting poles or eucalyptus leaves on 1.5 m covering made from banana or eucalyptus leaves.
- When planting in the dry season, plant each cutting in a depression to retain water and avoid run-off.

- Seed beds should not exceed 1.2 m width to ease maintenance.
- Leave a spacing of 0.7 m between each seed bed; more spacing helps when hilling later.
- When planting the 2-row seed beds, space 30 cm between rows, 30 cm to the edge of the bed and 30 cm between plantlets.
- The greater the spacing, the greater the number of tubers that can be harvested.
- Before transplanting the rooted apical cuttings, ensure that they are of high quality.
- Plough the plot under the seed beds to a depth of 20-30 cm.
- Seed beds should run across the slope of sloping terrain, following its contour to reduce soil erosion.
- No soil clumps.
- The main characteristics of a good cutting are:
  - 8-12 cm high from the collar (stem at the base of the growing medium), 10 cm in the optimal length.
  - Short internodes.
  - Strong collar and stem.
  - Well-developed roots, but no root bound (roots growing round and round because of too small container, as this halts plant growth).
  - Dark green leaves.
  - Well-watered.

5. Planting rooted apical cuttings

- Seed beds should not exceed 1.2 m width to ease maintenance.
- Leave a spacing of 0.7 m between each seed bed; more spacing helps when hilling later.
- When planting, demarcate the planting holes using a sisal string and a 30 cm wooden stick.
- Do not plant in full sun. Plant on cloudy days or in the late afternoon of a sunny day.
- Plant ¼ to ½ of the rooted apical cutting so that only the top foliage is above the ground.
- Compact the soil well around the base of the plantlet to ensure good contact between the roots and the soil.
- When planting in the dry season, plant each cutting in a depression to retain water and avoid run-off.
- When there is very hot sun or very heavy rains, protect the seed plot. Use a +/- 50% shade net or traditional nursery covering made from banana or eucalyptus leaves on 1.5 m wooden supporting poles.
- Depending on the weather, remove the shade net or nursery covering after 1-2 weeks when cuttings are well established (when growth is initiated, and new leaves appear).
- Shading for too long will reduce the strength of the cuttings.
- Optionally, place a signpost with the variety, spacing, number of cuttings and date of planting at each seed bed to ease monitoring.
- Draw a map of the seed plot in the record book with all relevant information in case the signpost writing fades.
- Overall, regular and accurate record keeping is essential in professional and potato production.

6. Pest and disease management

- Monitor the seed plot every few days for diseases and pests.
- Keep the cuttings well-watered after planting until they are well-established; yield loss will be significant if the crop is not well-watered.
- Depending on sun exposure and temperature, water the seed plot once or twice a day.
- Close monitoring is very important as there are no strict watering rules.
- Late blight, a fungal disease, infects the leaves, stems and tubers.
- The disease is high in cold and wet weather.
- Infected plants have brown spots within yellow halos (circles).
- Late blight is treated with chemicals. First spray a contact fungicide (Mancozeb), then alternate spraying contact and systemic (Ridomil) fungicides.
- Read well and respect the instructions on the chemicals’ packaging.
- Wear protective clothing when spraying.

- Bacterial wilt, a soil and seed borne disease, causes potato plants to wilt, even when there is enough soil moisture.
- The seed plot should be free of bacterial wilt.
- Disease spread can only be reduced through good management practices like good crop rotation; using quality cuttings or seed tubers; using clean footwear and tools; limiting access to the seed plot; avoiding water run-off; and uprooting wilting plants with soil around the roots and disposing of them in a pit as far as possible from potato plots.

- Many types of viruses can be transmitted by direct contact or insects.
- Infected potato plants can often show multiple symptoms (abnormal growth, stunting, leaves with mosaic, curled leaves, etc.) due to infection by several viruses at a time.
- Uproot and dispose of plants showing disease symptoms.

- Always keep tubers covered with soil to avoid exposure to insects.
- In their larval stage, cutworms cut young potato stems, mostly at night. Cutworms are found near the cut stems and can be killed by hand or by spraying Rocket insecticide.
- In some areas, treating for cutworms at planting is essential otherwise there can be complete loss from cutworm damage.