

Preparation of a Vegetable Nursery and Transplanting

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1. Main Issues

- Importance of a Nursery in Vegetable Production
- Selecting a Site for a Nursery
- Preparing Nursery beds
- Management of the Nursery beds
- Transplanting seedlings from the Nursery beds

2. Useful Information

2.1 Importance of nurseries

- Nurseries provide ideal conditions for raising strong and healthy plants
- Nursery beds are easier to manage a crop at a tender age
- Nurseries enable the farmer to have enough time to prepare the permanent beds while the crop is growing in the nursery. So it saves the farmers' time.

- Since a lot of plants are being raised on a small area with better management the quality of seeds is bound to improve.
- During the first four weeks from germination the crop uses less nutrients including water.

2.2. Selecting a site for a Nursery

- It should be on a flat land to prevent erosion of soil and nutrients
- It should not be shaded by trees
- It should be close to water sources for frequent irrigation.
- The soil should be well –drained and fertile
- The nursery needs to be protected from all kinds of livestock

2.3 Management of nursery beds

- The size of the nursery bed depends on the garden size and spacing of the crop to be planted.
- A standard nursery bed width of 1metre is recommended and length is determined by the quantity of seedlings the farmer needs.
- When preparing a seed bed till the soil to a depth of 20cm with a hoe or garden fork.
- Add 1 bucket of manure per 2m² to the soil and mix in thoroughly.
- Make a raised bed of about 20cm high, 1metre wide and desired length
- Thoroughly water the bed with watering can with a rose spray before sowing (**2cans per square metre**).
- After **one hour** sow the vegetable seeds in drills or rows **20cm apart** to make thinning and weeding easier.
- The rows should be along the width of the bed and should be drilled with either a finger or short stick, **0.5cm deep**.
- Seeds must be sown at 3cm intervals along the drills and cover lightly with some soil or sand.
- Cover the surface of the bed with clean dry grass to avoid rapid drying of the nursery bed.
- Spread grass evenly over the bed so that no light reaches the soil.
- Water the seed bed again after mulching to avoid washing out of the seed.
- Continue to water the bed twice a day approximately 1 can per square metre.

- *Keep the bed moist but avoid over watering.*
- Always use a can with a rose when watering to give the gentle watering.
- Check every day to see if the seedlings are emerging.
- *As soon as the seedlings have emerged the grass must be removed gently so as not to disturb the seedlings.*
- Usually germination takes place 3 to 5 days depending on the crop although some crop like sweet pepper takes 2-3 weeks.
- After germination make a grass roof about 30cm high This will provide shade for the young seedlings and reduce evapo-transpiration.
- Gradually reduce watering to once a day and remove the shade roof two weeks after germination.
- Thin the seedlings to one seedling to one plant every 6cm along each row.
- Water thoroughly before thinning to make it easier to lift the plants by hand.
- Remove weaker plants first and the rest to achieve required spacing.
- **Thinning minimises competition for light and nutrients between plants to produce strong seedlings.**
- *Keep the nursery bed weed- free at all times.*

2.4 Transplanting seedlings from the nursery beds

- Seedlings are ready for transplanting when 10-15cm tall or at 4-6 weeks old.
- Plants like onions may be ready after 6-7 weeks.
- Reduce amount of water to be applied to the nursery bed one week before transplanting. This process is called HARDENING OFF to help seedlings overcome the stressful environment which they will be subjected to after transplanting.
- Transplanting should be done late in the afternoon or on a cloud or cool day to prevent seedlings from wilting or dying.

2.5 Steps in Transplanting Seedlings

- **Step 1:** The day before transplanting gently water in the seedbeds. Do not water on the day you transplant.
- **Step 2:** Use the correct in-row and between –row spacing for the vegetable to be transplanted and then mark and dig all planting holes to be transplanted the same day.
- **Step 3:** Remove the seedlings from the seed bed with as much moist soil around its roots as possible

- **Step 4:** Place the seedlings carefully in a bucket, basket or bowl and transport them immediately to the planting site
- **Step 5:** Quickly plant the seedling in its planting hole without bending its roots. **Plant at the same depth as the seedlings were before being transplanted except for tomatoes which often do better if planted deeper.**
- **Step 6:** Hold the seedling in one hand and using two fingers of the other hand make a hole 3-5cm deep at a marked position. Carefully place the seedling in the planting hole with the roots pointing downwards.
- **Step 7:** Place the soil firmly around the root collar of the seedling with your fingers to keep it upright and to expel any trapped air.
- **Step 8:** Gently water the seedlings and then shade them with leaf twigs or arched dried grass to protect it from the heat of the sun
- **Step 9:** Continue transplanting, watering and shading until all the planting holes are filled.
- **Step 10:** Mulch the shaded seedlings.
- **Step 11:** Any excess seedlings may be sold except for a few which should remain to replace the ones that may die.
- **Step 12:** After a week remove the shading twigs or grass and water twice a week. Remember cabbages and tomatoes need more water than onions. As the vegetables grow big more water needs to be applied.
- **Step 13:** Keep a diary to record all the activities you are doing each day and the dates as well.

2.6 Planting Vegetable Seeds directly

- Not all vegetables need to be put in a nursery e.g. carrots, cucumbers, beetroot, butternut, beans and peas.
- Vegetables which require nurseries include the following; cabbage, covo, rape, chou mulier, tomatoes, lettuce, eggplants and spinach.
- After the soil has been **limed, dug, manured, fertilized, leveled and a fine tilth obtained**, it is ready for planting seeds directly.
- Follow the following steps:
- **Step 1:** Water the soil with 25litres per square metre the day before planting and then sprinkle cutworm bait and a slug and snail over the soil.
- **Step 2:** Look up for correct in-row and between row spacing for the type of seeds you are planting and make furrows in straight lines with a hoe, stick, or planter to the correct depth of the seedbed. As a rough guide the depth should be about 5times the width of the seed. For small seeds 2-5mm depth is adequate and for big seeds like beans and maize it should not exceed 50mm.
- **Step 3:** **Water the furrow to be sown with seed and then plant the seeds the correct distance apart. Do not plant too many seeds close together as more seeds will be wasted during thinning.**

- **Step 4:** Cover the seeds in the furrows with sieved compost, fine soil or soil from each side of the furrow. Cover the soil with a layer of grass as mulch to control evaporation and gently water the rows.
- **Step 5:** Water the rows twice a day preferably early in the morning and late in the afternoon.
- **Step 6: Monitor on a daily basis to check for germination and then immediately remove the grass from the furrows to between furrows.**
- **Step 7:** Water the seedlings twice per week or more often in hot weather up to 35 litres per square metre.
- **Step 8:** Record in your diary the date you planted each type of seed, when they emerged, the costs of seed and fertilizers used and the mass and income of the harvested vegetables.

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