COCONUT NURSERY SELECTION AND MANAGEMENT

Success of coconut plantation establishment starts with the production of good quality planting materials.
Rearing coconut seedlings in a well-maintained nursery facilitates efficient selection of normal uniform seedlings.
High quality planting materials provide a good head start to sustain the coconut palms productive and economic lifespan of 60 or more long years in the field under extremely variable conditions.
Selecting the best planting materials before field planting assures higher productivity per unit area per unit time.

1. Nursery Site Selection
A good nursery should:
- Be open, level and well drained;
- Have light or loose textured soil to facilitate nursery operations;
- Have a good source of water without possibility of being flooded;
- Be accessible to transportation;
- Be far from existing potential sources of coconut insect pests and diseases, e.g., saw mills, pile of decaying logs, site to animal manure, etc.

A nursery site with a minimum area of 3,600 m² is needed to accommodate about 12,000 seednuts good for 50 ha. To be fully operational, the nursery should have a fence for security; a shed to house the implements and supplies; farm implements and small equipment; a source of water for irrigation; and sufficient trained manpower.

2. The Seedbed
The seedbed should preferably be in the center of the nursery. To facilitate sowing of nuts, it should be cleared, plowed and harrowed to a fine tilth.

Seedbeds are prepared with the following dimensions:
- Elevation: 10-20 cm high to provide drainage.
- Width: 1 m to avoid stepping on seednuts during maintenance and transfer operations.
- Length: a 2 m long seedbed is ideal for easy inspection, management and maintenance; a seedbed measuring 1 x 40 m can accommodate about 1,000 seednuts.
- Pathway: 0.75-1 m between seedbeds should be provided to facilitate inspection, selection, pricking, maintenance and seedling transfer activities.

Nuts are planted firmly setting them either upright or slightly tilted with the germ end at the top.
The nuts are set close to one another to prevent them from floating in case of heavy rains.
The nuts are then covered with soil, with about 2/3 of their size buried.

Sowing of Seednuts
In addition to keeping a record file, a sign board, placed in front of each bed, provides the following information:
- Name of variety/type
- Date of sowing
- Number of nuts sown
- Seedbed number
- Date when nuts are harvested, if available
- Date when nuts are received in the nursery

Maintenance of Seedbed
This activity involves daily watering except when it is raining; weeding, if necessary; partial shading when needed; and inspection for disease and pest incidence.

Pricking
- When the sprout emerges though the husk to a height of 4-6 cm, seedlings are planted in the field nursery either directly in the soil or in polybags to allow them more space to grow.
- Seedlings of the same age are pricked on the same day and immediately planted in the field or polybag nursery. Pricking can be scheduled once a week.
- After pricking the germinated seednuts from the seedbed, the vacated plot is refilled with soil so as not to destabilize the remaining ungerminated seednuts.
- Discard all nuts producing sprouts, which are multiple, thin or etiolated, bent or spindled, and albinos.
- The optimum waiting period for ending the observations of germination in each seedbed is around 16 weeks from the date of sowing or when 85% germination had been achieved, whichever comes first.

3. The Polybag Nursery
A polybag nursery makes use of black polyethylene bags, hence its name. It is preferred over field nursery because:
- Transplanting shock is greatly minimized, thereby promoting early establishment of transplanted seedlings;
- Seedlings can be retained longer in the nursery when conditions for field planting are not favorable; and
- Age-wise, seedling selection is easily accomplished.
Polybagging of Germinated Nuts

- A polybag, preferably black, UV resistant for durability and measuring 40 x 40 x 0.015 cm (for smaller nuts) or 45 x 45 x 0.015 cm (for bigger nuts) with 8-10 holes at the bottom sides, is half-filled with soil and compost mixed at 50:50 ratio.
- Decomposed sawdust, corncobs, rice hull and other organic materials can be used. This will reduce the weight of the half-filled polybag and improve soil fertility.
- If the polybags are not gusseted (Note: polybags with folds at the bottom maybe ordered), the bottom corners should be folded inward to make the bottom of the bag round and for it to stand firmly. The open edge of the bag is also folded back (about 3 cm) to prevent it from tearing easily.
- The germinated nut is then placed in the half-filled bag with sprout in the upright position in the center of the bag.
- Next, the bag is filled with soil with the sides slightly pressed to keep the nut firm until it is fully covered.
- As the soil settles, it will cover up to 2/3 of the nut after some time.
- When the polybagged seedlings are already, they are laid out in the polybag nursery.

Laying Out of the Polybag Nursery (Staking)

- Equal setting of the seednuts at optimum distance allows them to grow and develop normally.
- The technique follows a triangular system with equal spacing of 60 cm.
- The materials needed are the following:
  1. About 30 m rope or twine for establishing a straight line and making a 3, 4, 5 triangular
  2. 100 pcs bamboo pegs or equivalent 30 cm long
  3. A measuring tape or stick
  4. Twine for making 30-cm spaces, about 10 m long
  5. Pieces of stick, 52 cm long
  6. A sharp bolo, or its equivalent
  7. Compass and marking pen
- A 60-cm long spacing in triangular manner
- To minimize shading, rows should be oriented in a North-South direction.
- As a start, about 10 m twine is marked every 30 cm along its entire length.
- First, establish a straight line and a 90° corner with the longer side towards the North. This is done by making a 3, 4, 5 triangle using the 30 m rope. Boundaries are set by means of rope or twine to guide the setting of rows. This is made to establish four straight boundary lines and four 90° corners.
- The next step is to lay the 10 m string in the direction of the North and then mark the 30 cm spaces. This becomes line 1 or row 1. Then, align the string marked every 30 cm and subsequently peg the 30 cm marks. Repeat the procedure to make rows 3, 4, 5, etc.
- To establish 60 cm, remove the pegs every other 30 cm starting from the second mark in line 2. These are marked X in the apposite figure.
- As the work progresses and as the workers gain experience, the marks are pegged every 60 cm by estimation.

Setting the Polybagged Seedlings

The polybagged seedlings are placed in front of the stake, set firmly and with the erect shoot aligned at the stake. Since centering of the sprout in the polybag may not be precise, the emerging shoot should be set in only one direction at a point closest to the stake. Set the polybagged seedlings in the same order as they germinated. The earliest germinating seedlings are placed in the first row in the eastern side of the area. The last ones to germinate are placed in the western section of the area. This practice reduces the competition from sunlight from among the earliest and latest germinating seedlings.

Most importantly, selection of vigorous seedlings is facilitated and since the first pricked seedlings are placed in rows, culling or judging by age is easily accomplished. A signboard indicating the type/variety, the number of seedlings and date of sowing is installed in front of each plot.

Maintenance of the Polybagged Nursery

In order of priority, this involves watering, weeding, and inspection for pest and disease incidence.

Fertilizer application for each seedling is recommended as follows:

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<tr>
<th>Age (Months)</th>
<th>Fertilizer Application</th>
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<tbody>
<tr>
<td></td>
<td>(NH₄)₂ SO₄</td>
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<tr>
<td>(After germination)</td>
<td>(21-0-0)</td>
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<tr>
<td>2</td>
<td>20</td>
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<tr>
<td>5</td>
<td>40</td>
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</tbody>
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Maintenance of the Polybagged Nursery

The fertilizers are mixed and applied directly to the soil around the nuts. Afterwards, the soil is lightly cultivated to promote faster dissolution and absorption of fertilizer. At 6-8 months after polybagging, leaf splitting occurs, indicating that the seedlings are ready for field planting.

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