



Participant Handbook



Sector
Rubber

Sub-Sector
Rubber Plantation
Rubber Production] Natural

Occupation
Rubber Nursery Management

Reference ID: **RSC/Q6005, Version 1.0**
NSQF Level 4

Rubber Nursery Worker
- General

2. Sorting and Temporary Storage of Seeds



Unit 2.1 - Sorting Quality of Seeds and Storage

Unit 2.2 - Germination of Seeds

Unit 2.3 - Planting in Nursery

Unit 2.4 - Nursery Maintenance and Disease Management

Unit 2.5 - Development of Multi-clone Bud Wood Nursery

Unit 2.6 - Production of Advanced Planting Materials

Unit 2.7 - Preparation of Planting Materials for Sale



viability due to fermentation and growth of moulds. Store fruits in open weave hessian sacks, stacked on poles or hung from hooks under shade. Alternatively, 'dokos', baskets, or specially made drying trays with gauze bottoms can be used. Always keep well off the ground so that the bottoms of the containers do not get damp. Protect from rodents!

- **Extract seeds quickly:** If the fruits are properly ripened, it is best to remove the seeds as soon as possible. However, do not expose unripe green fruit, such as pods, capsules or drupes directly to the sun, as the moist seeds within are easily damaged by heat. Leave the fruit in the shade until brown or an appropriate colour before putting in the full sun.
- **Treat seeds gently:** Process fruits and seeds carefully and cleanly to avoid physical damage to the seeds and introduction of insects and fungal spores. Seeds will only store well if they are undamaged and uncontaminated.

2.1.3 Viability Tests

Viability of the seed may be a live of what percentage seeds are alive and will change into plants which is able to reproduce themselves, given the suitable conditions. It is vital to understand that the seeds that are hold on can grow to supply plants. So they have to have a high viability at the beginning and during storage. The viability of seeds at the beginning of storage conjointly determines the storage lifetime of the accession. Rubber seeds haven't any dormancy, germinate quickly and fungal growth is that the limiting factor influencing storage amount of seed viability. Solution of polyethylene glycol 6000 (PEG 6000) have osmotic potential and osmotic adjustment that's used as a coating material is predicted to be a preservative throughout storage.

Viability is determined at the beginning of storage and at regular intervals throughout storage to predict the proper time for regeneration. The viability takes a look at takes from many days to weeks or perhaps months to provide a correct result. Wherever the viability cannot be determined before storage, the seeds ought to be placed into long storage to make sure their safety while awaiting the results of the take a look at.

The most correct take a look at of viability is that the germination takes a look at. The germination test is formed under controlled conditions to seek out what percentage seeds can germinate and produce normal seedlings that may change into normal reproductively mature plants.

Rubber seeds lose viability very rapidly if left in the field. The seeds are therefore picked up daily during the seed fall season and quickly transported to nurseries for germination and planting.

2.1.4 Temporary Storage of Seeds

Need to store seeds

- Forest districts will either collect seeds locally, or receive them from the Tree Seed Centre or other supplier already processed. In either case, the seeds will have to be stored for a few days to several months until the right time comes for sowing in the nursery.
- If seed is sown at the wrong time, unsuitable plants will be produced for planting out, and survival will be reduced. Sometimes it is necessary to collect sufficient seed for two or more planting seasons if seed crops tend to be poor in some years. In this case, the seed will need to be stored for a year or more.
- Storage must be done properly so that the seeds do not lose vigour and viability. Unfortunately, a lot of seeds are lost due to improper methods of storage, and there is need to improve them.

2.3.2 Water and Care of the Rubber Seedlings

The rubber tree plant also wants the proper balance of water. Throughout the growing season, it has to be kept damp. It's also a good plan to wipe off the leaves of your rubber tree plant with a moist cloth or spritz it with water. If you water the rubber tree plant in an excessive amount, the leaves can turn yellow and brown and fall off. Throughout the dormant season, it should only be watered once or twice a month. If the leaves begin to droop, however not fall off, increase the water you provide the rubber tree plant step by step till the leaves perk back up once more.

Care for the immature plant: The growth of the rubber trees is defined by the perimeter of the trunk, measured at 1 m above the soil surface. When the trunk measures 46 cm around, it is time to start harvesting the rubber. In better soils this is generally the seventh year after planting. In poorer soils, the trees may not be ready for harvesting until the eighth year.

Weeding

- **Weeding between the trees:** This should be done 4 - 6 times a year, especially when the trees are small. Weeds should be cleared in a diameter 1.5 meters around the tree.
- **Weeding between the plantation sections:** This can be done by hand, by machines or by applying herbicide. Within the plantation, weeding can also be done by machine when the trees are 2 - 3 years old. Make sure that the machines are only allowed to operate at least 1.5 m away from the foot of each tree.

Fertilization

Mineral fertilizers should be applied every year. Two applications should be made during the rainy season each year. The fertilizers should be broadcast beneath the canopy of the rubber trees. Fertilizer can also be applied by digging holes in the spaces between the trees, and manure placed in the holes. This practice helps to maintain the humus content in the topsoil.

Mulching and Pruning

Mulching should be done at the end of the rainy season, using rice straw or dried weeds. The mulch layer should cover the soil under the tree canopy and should begin 10 cm from the tree foot. A thin layer of soil should be used to cover the mulching material. To help aerate the roots, turn over the soil surrounding the foot of the tree.

Prune the shoots regularly and selectively, making sure to maintain 1 - 2 leaf layers under the main shoot to create favorable conditions for photosynthesis and nutrition of the trees.

Preventing Fires

At the beginning of the dry season, it is necessary to clear the vegetation and debris from a broad band six meters wide all around the plantation. This ring of bare earth will act as a firebreak, and protect the plantation from fire.

Cover Crops

While the rubber trees are immature, it is recommended to grow selected legume cover crops over the whole rubber plantation.

Inter-cropping:

Inter-cropping can be carried out with coconut trees and banana plants within the rubber plantation. Sometimes banana alone is used as an inter-crop. Inter-cropping can also be carried out with coffee trees and hot pepper.

Inter-cropping while the rubber trees are immature can generate extra income, and make farming on the rubber plantation more intensive.