Skill India
कौशल भारत-कुशल भारत

सत्यमेव जयते
GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT
& ENTREPRENEURSHIP

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RUBBER SKILL DEVELOPMENT COUNCIL

Participant Handbook

Sector
Rubber

Sub-Sector
Natural Rubber (NR) Plantation

Occupation
Production-NR

Reference ID: **RSC/Q6107, Version 1.0**
NSQF Level 4

General Worker - Rubber Plantation

Table of Content

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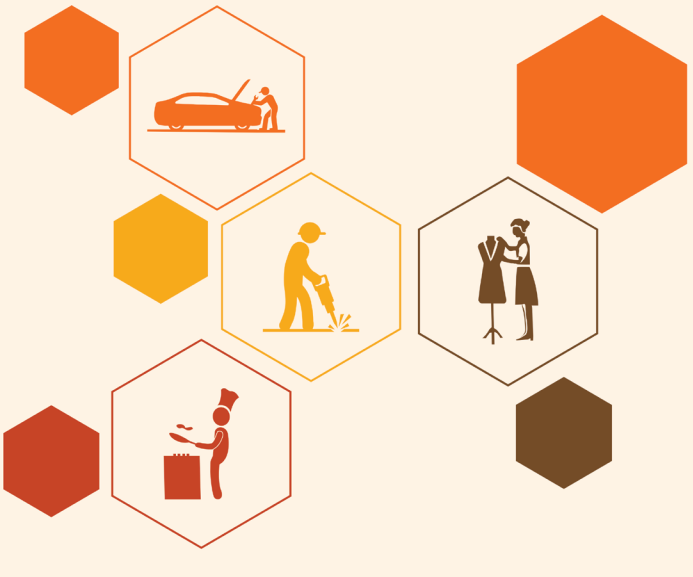
2. Rubber Plantation Development and Maintenance



RSC/N 6108

UNIT 2.2: Plantation

Unit Objectives

At the end of the unit, you will be able to:

1. Handle and transport the planting material.
2. Prepare silt pits and soil/stone bunds.
3. Consider cost, operation and maintenance.
4. Used drainage techniques in Rubber Plantations.

2.2.1 Handling and Transportation of Planting Materials

Handling and Transportation of Planting Materials to the planting site

Following are the criteria for a nursery's location:

- There should be a reliable supply of water, ideally being near a river or ponds, or where a water tank or a drum to store water is available
- The site should be accessible all year round, so that customers are able to get seedlings easily, and so that nursery staff can manage plants and transport mature seedlings to planting sites and/or markets.
- Good soils and other planting materials such as sand should be available easily.
- The site should be protected from strong winds and from livestock, should receive sun, and should be on a gentle slope to allow drainage.

2.2.2 Silt Pits and Soil/Stone Bunds

Silt pitting is the construction of pits or trenches of different sizes and shapes across the hill slopes to reduce the length of slope; thereby decreasing the volume and velocity of runoff and to collect runoff water and eroded sediment containing nutrients which would otherwise be lost from the field . The collected water and nutrients are then redistributed into the soil of plant root zone around the pits after rainfall events. Moisture percentage of the soil around the period of tapping affects the latex yield conceived from rubber plantations. There is scientific proof to prove that the soil moisture level can be raised by harvesting and preserving the fell rainwater residing in the plantations by taking slit pits. This can also assist in conserving the top soil and therefore welcomed as a nature – friendly plan. To show the importance of soil moisture preservation for yield enhancement and thereby to encourage the practice, a plan for giving financial help for Soil preservation and Water Harvesting in adult rubber plantations was in function since 2007 – 08. Silt pits at 200- 250 numbers per ha., having an ideal size of 4ft. X 1.5ft. X 2.5ft. are recommended for effective conservation of water in rubber plantations for which financial assistance limited to INR 3000/- per ha will be reimbursed.

Soil Bunds

Being one of the most usual precipitation harvesting techniques in agriculture, the primary motive of bunds is to slow down and strain runoff water from rainfall and therefore decrease soil disintegration. As the water flow is slowed down, accelerated amount can penetrate into the soil, resulting in increased soil moisture. Water is dispersed more equally and evenly which can stop gully from forming. Bunds are the opposite of field trenches, where slots and trenches are dug out to stop, store and penetrate floodwater and surface run – off.

time remain concealed under multch or other materials lying on the ground. Their presence can be detected by the spring like excreta and glistening lines of dried slimy secretion.

Non parasitic Maladies:

Sun Scorch: Damage due to sun scorch are more when the rubber plants are young. When the canopy closes, the plants are protected from sun scorch. Very small nursery plants get sun scorch at the collar region resulting in girdling. Such seedlings dry up.

In young plants the bark near the collar region facing south or south west gets damaged by sun scorch. The bark in that region dries up in budded plants the snag dries up leaving a depression above the bud union. When this faces the south or south west sun scorch becomes prominent. The bark dries up in the shape of a spearhead and hence the damage is also called spear head damage. Saprophytic fungi colonise the dried portion. If left untreated the tree may break at that region. Application of black panel protectant and wound dressing compounds on bark also leads to sun scorch if exposed to direct sunlight.In the nursery, mulching prevents damage to the collar region. Providing shade basket or plaited coconut leaf provide protection in the first year of planting covering the stem with thatch grass or hey also is effective. From the second year whitewashing of the brown portion of the stem should be done during November/December to protect the plants from sun scorch in the summer. Lime is effective for white washing although china clay also can be used. The sun scorch affected portion of the stem should be scraped and washed with a solution of mancozeb 0.75% (Dithane/Indofil M 45 10g/L) and the wound should be covered with a wound dressing compound.

2.3.3 Insecticides and Pesticide Usage

Leaching losses

It is generally an accepted practice that fertilisers should be applied, to the root zone of the crop. For rubber during the initial stages after establishment, the roots are confined to a small circle around the plant .Thereafter the roots extend well into the mid-point of the interrow. The distribution of the active feeder roots in mature trees increases from about 60cm away from the tree to the peak at a point about 300cm from the tree and thereafter this declines. Thus, fertiliser applications have to be confined to this zone.

During the first year of field budding, the fertilisers are applied in a small circle 30 — 40cm in diameter. This amounts to about 270 kg/ha of NPKMgfertiliser. Thus, the effective zone of application is only 0006 ha and the effective rate amounts to 40 tonnes per ha. Thus, one dressing of 170g per tree would amount to 13 tonnes per ha containing about 5 tonnes of ammonium sulphate. A considerable proportion of this fertiliser at these rates could be lost by leaching.

More than twice as much nitrogen and potassium is lost from sandy to sandy loam soils than from clay to clay loam soils, when an average rainfall of about 1cm is experienced. However, if 2 – 5cm of rain per day is experienced, then even on the clay to clay loam soils, up to 50 percent or more of the fertilisers is lost by leaching within 10-15 days of fertiliser application. The split application of fertilisers at greater frequency than hitherto practised becomes of paramount importance.

Timing

In addition, correct timing of application is a pre-requisite. During the early stages of growth, the application of fertilisers should be at closer frequencies and as far as possible, being in relation to the active flushing of leaves which is continuously taking place. In mature rubber, uptake of nitrogen is active at the commencement of refoliation and the uptake diminishes after four to five months.

Slow release fertilisers

Ideally, a slow release fertiliser with controlled release of nutrients would satisfy both these requirements.