

ANDHRAPRADESH STATE ROAD TRANSPORT CORPORATION

No.T2/123(6)/OPD(T)-2016



O/o the VC & MD
RTC House, Vijayawada.

CIRCULAR NO:-~~14~~/2016 – OPD (T)/AP, Dt. 12-06-2016

Sub: PLANTATION - Developing plantations in all the vacant lands available with the APSRTC during the Monsoon season – guide lines issued - Reg.

All the 13 districts of AP have reeled under scorching temperatures during this summer and it is common knowledge that these increasing temperatures are a result of Green House Effect caused by the build up of CO₂ in the atmosphere. As a transport operator we make use of fossil fuels which substantially contribute to the CO₂ emissions, as such there is a larger responsibility on us to compensate the same by way of improving green cover on our lands, **by planting trees.**

The best time to plant a tree is twenty years ago. The second best time is now. --Anonymous

Trees produce oxygen and store carbon and they do it day after day and year after year. As a tree grows it removes carbon dioxide from the atmosphere and then converts that carbon dioxide into clean water and oxygen and releases it back into the atmosphere.

It is pertinent to note that every person produces 2.3 tons of CO₂ per annum. On the other hand every litre of diesel consumed by us generates 2.5 Kg of CO₂. We operate nearly 47 lakh KMs per day consuming 9 lakh litres of diesel every day which means our buses are releasing nearly 2250 tons of CO₂ into the atmosphere every day. **These facts shall certainly make us sit up and spur us into positive action of planting more and more trees**

The Worldwatch Institute, in its *Reforesting the Earth* paper, estimated that the earth needs at least 321 million acres of trees planted just to restore and maintain the productivity of soil and water resources. **For every ton of new-wood growth, about 1.5 tons of CO₂ are removed from the air and 1.07 tons of life-giving oxygen is produced.**

APSRTC has at its disposal large tracts of open land which shall be effectively brought under green cover with the help of forest and horticulture authorities for selecting seedlings and root cuttings suitable for the soil available.

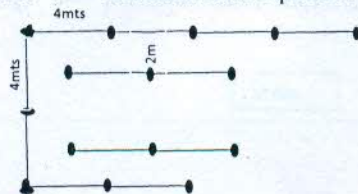
Someone is sitting in the shade today, because, someone planted a tree a long time ago. --
Warren Buffett

One of the best trees that can be grown on our lands is Teak (*Tectona Grandis*). Teak can grow on a variety of soil. It develops best on well drained, deep and fertile soils, especially on volcanic substrate or on alluvial soils of various origins. The optimum soil pH is between 6.5 -7.5 The calcium magnesium and phosphorus content in the soil is another important factor and its deficiency results in stunted growth optimum rainfall for teak range between 1,250 and 3750 mm. the species requires a dry season of at least 4 months with less than 60 mm. precipitation.

Plantation sites should be selected on well drained soils and in areas with low incidence of strong winds. Slope shall not exceed 30 degrees. **Water logged and saline soils are not suitable.**

1. THE SPACING.

The position of each teak stump shall be pegged with a piece of bamboo about 1 m. high. A spacing 2x4 m. is recommended. This spacing will result in a better stem form, self pruning, compared with the parent trees. The best recommended pattern is given below



2. The Seedlings

The seedlings are normally available in two types poly bag seedlings and root stumps

Poly bags seedlings. They are small plants made available in polythene bags. The following procedure shall be adopted while transplanting them

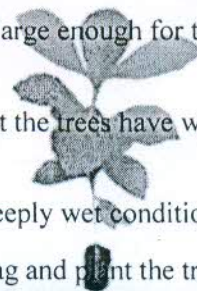
-After proper soil preparation the holes for planting should be large enough for the bag containing the tree to fit in side.(30x30x30 cm.)

-Cut the bags at bottom side open before planting to ensure that the trees have well-developed roots systems and the roots are undamaged.

-Planting day should be made after heavily rainfall and soils deeply wet condition.

-Do not plant the teak trees deeper than it was planted in the bag and plant the trees upright.

-After heavy rainfall, check water logging at the base of the trees.



Stumps seedlings. "Stumps" are seedlings of which most of the shoot and side roots have been removed, leaving only a 20–25 cm long piece. Stumps can be planted successfully only for a limited number of broadleaved species. Most commonly stumps are used for Teak

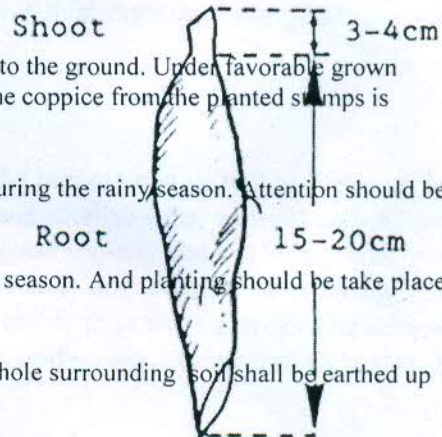
-Avoid injuries to roots of stumps seedlings.

-The stumps are out-planted easily by plugging them in to the ground. Under favorable grown conditions, the survival rate can be as high 95 % and the high growth of the coppice from the planted stumps is between 0.75 to 1 m. at the end of first growing season.

-Planting periods should be on overcast and rainy day during the rainy season. Attention should be paid to the following:

(a) Seedling should be deeply planted, early in the rainy season. And planting should be take place during wet conditions.

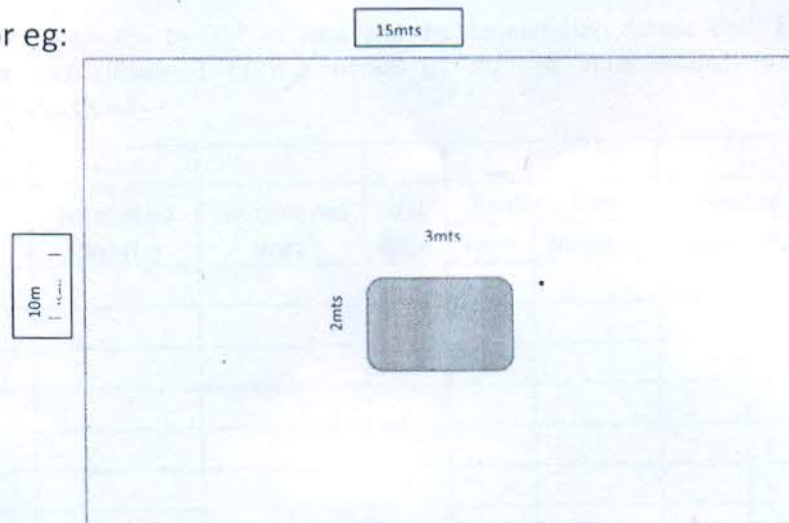
(b) After seedling have been planted(30 days), planting hole surrounding soil shall be earthed up and made like a turtle's back to prevent water logging and gathering.



3. Low Lying Areas

In open areas which are normally low lying an artificial trough shall be created in the centres and the excavated soil shall be sectioned to increase the level of the surrounding area. This helps in draining of water into the trough and prevent water logging for the plantation area also act as a ground water recharge point.

For eg:



4. Pruning and thinning

Sometimes planted stumps produce multiple shoots of which only the most vigorous one kept. Initial planting density is generally between 1,200 and 1,600 plants per hectare. The spacing of trees and the number, timing and intensity of thinnings strongly affect the pattern of growth and the yield of the plantation. The timing of the first thinning is often determined by the height of the trees and is commonly carried out when the trees reach 9.0 to 9.5 m. The second thinning may be carried out when the trees reach 17 to 18 m.

Overall, it is desirable to thin the plantation to the number that is optimal for reduction of undue competition and for the best growth of the remaining trees. A final stocking of about 300 trees per hectare would be the ideal.

5. Alternative plantation

Where the soil is not suitable for Teak plantation the best alternative will be Neem as The Neem grows on almost all types of soils including clayey, saline and alkaline soils, with pH upto 8.5, but does well on black cotton soil and deep, well-drained soil with good sub-soil water. Unlike most other multipurpose tree species, it thrives well on dry, stony, shallow soils and even on soils having hard calcareous or clay pan, at a shallow depth. The tree improves the soil fertility and water-holding capacity as it has a unique property of calcium mining, which changes the acidic soils into neutral. Care shall be taken to ensure a spacing of 5 metres between each plant.

Alternatively wherever the soil is suitable Coconut tree plantation shall also be considered. If the soil is suitably elevated, saplings can be planted directly, but if the land is slightly low lying, then saplings shall be planted in 2 to 3 feet high mounds.

Exotic varieties like Sandalwood and Red Sanders shall also be planted in secure areas depending on the availability and suitability of the soil.

Action Plan

Step 1: Identification of open land and selection of suitable tree type

This shall be completed by 25th of June and the enumeration details shall be tabulated in the following proforma and submitted to this office by 30th of June mailed in Excel format to CTMAPSRTC@GMAIL.COM

DEPOT									
Sl No	Location	Total Area (SqMts)	Un covered area	soil type	Existing Trees		Proposed trees		Remarks
					Type	Number	Type	Number	
1	Garage								
2	us station 1								
3	Bus station 2								
4									
5	Other place								
6									
	Total								

Step 2: Approaching the Forest and Horticulture authorities

The local forest and Horticulture authorities shall be approached **immediately** with a specific request for supply of the required number of seedlings immediately and the plantation shall be planned in accordance with the delivery schedule communicated by these authorities.

Step 3: Preparing the Soil pits for transplanting seedlings

The activity of preparing pits and transplanting seedlings shall be taken up with the active and enthusiastic involvement of each and every employee of the respective unit and shall be undertaken with much jubilation and joy. The unit officers shall involve all concerned in every step of the way so that a sense of belongingness prevails and every one feels protective of the seedlings planted. Each employee shall adopt a certain area and every three months the relative growth of the plants shall be compared and appreciated. They shall be permitted to grow legumes between the trees.

The Regional Managers shall coordinate at the district level and plan to participate in the depot level plantations to motivate the employees. At the district Head Quarters Depot, the event shall be organized involving the local celebrities and District officials.

Step4: Security and Sustenance

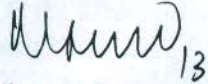
Where plantation is done in unsecured open lands it shall be endeavored to provide guards to the plants to protect them from cattle and vandals. It should be ensured that the plants shall survive and flourish into healthy trees. It is also recommended to bury palmyra (THATI) seeds at one foot depth, all along the border of these open lands which shall, with time they grow into sturdy trees forming a natural fence to the area.

A status report shall be submitted to this office duly consolidated at the regional level by 15 th of July in the following proforma and shall be reviewed every three months

Sl No	REGION DEPOT	Total Area (SqMts)	Un covered area	Soil type	Existing Trees		Planted trees		Remarks
					Type	Number	Type	Number	
					1				
2									
3									
	Total								

It is appealed to all the concerned that innovative measures are very much welcome in this regard AND every manager shall treat the issue with utmost serious ness so that we shall have discharged our responsibility towards environmental protection besides developing a valuable asset twenty years from now. **"If each employee plants and nurtures two saplings, more than one lakh trees can be grown"**.

The future shall remember us with respect and reverence and the society shall recognize the contribution of APSRTC .


13/6/16
Vice chairman &
Managing Director

Copy to

- 1) Director (Vigilance & Security) ✓
- 2) FA & CAO ✓
- 3) All Executive Directors (Head Office) ✓
- 4) All Executive Directors (Zones) ✓
- 5) All Regional Managers for compliance
- 6) All Officers of the Corporation