

Government of Andhra Pradesh  
Forest Department

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Office of the Chief Conservator  
of Forests, Andhra Pradesh, Hyd.

Sri A.K.Mathur, I. F. S.,  
Chief Conservator of Forests

CC's CIRCULAR LETTER NO. 18 82.

Sub:- Eucalyptus seedlings- Grading of in the primary  
nurseries- Regarding.

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The practice commonly followed for raising Eucalyptus nurseries in our State, is to use at the first stage small seedlings raised in primary beds for pricking out into the polythene bags, over a period of 2-4 weeks, from the time the first seedlings have attained the required size suitable for pricking out, without discarding any seedlings irrespective of their relative vigour and rate of growth from the time of their germination to the bricking out stage. Thus vigorously grown seedlings which are available at the earliest from such primary beds are used for pricking out to begin with, and the left over seedlings which have lagged behind, are also used for pricking out as and when they grow up to the required size. Everyone is thus happy that the primary seedlings from each bed are used up fully without any wastage. Recent observations made in Tamilnadu in the Forest Development Corporation, while raising Eucalyptus nurseries and plantations, appear to have shown that this practice of using all the seedlings from each bed over a fairly long period, as the seedlings grow up to the required size, is not desirable, and that this is a false economy, ultimately leading to reduced yields from plantations raised using all such seedlings.

1. The extreme variation in both diameter and height of Eucalyptus trees found in any Eucalyptus hybrid plantation, is mostly a result of the genetic variability of the individual plants. There appears to be some evidence to show, that the first batch of vigorously grown seedlings from the primary beds that are used for pricking out in the earlier stages express their vigour after their planting out in the field also, and appear to develop into the bigger size individual trees found in the plantations. Similarly primary less vigorous seedlings that have grown to required size later on, after reduced competition from vigorously grown seedlings which have been used up earlier for pricking out, seem to develop into lean, lanky and short trees so often seen scattered all over in these plantations, which contribute even upto 50% of the total stems in the plantations.

2. It is however not easy to distinguish the more vigorous seedlings from the less vigorous one in the fully grown polythene bag seedling stage, because of the high level of nursery inputs given to all of them. Once they are pricked out into bags individually, and through elimination of competition, at that stage between individuals. Thus at the planting time there will be little to choose between the bag seedlings, even though there was a lot of difference between these seedlings in the primary bed stage, where they had all to grow crowded, in competition to one another, with the genetically superior seedlings growing most vigorously, in competition with other inferior individuals which are left behind.

4. It therefore seems possible to reduce to a great extent, the large amount of unevenness (i.e., undersized trees) found in these Eucalyptus plantations, by utilising only the more vigorously early grown seedlings from the primary beds, for pricking out into the bags, and discarding the rest of the seedlings, which lagged behind in competition with the vigorous one in the crowded conditions of the primary beds. In practice, this could perhaps be achieved by discarding all seedlings which have not come up to the required size within a particular time, thus utilising only those seedlings which have reached the required size say in about 10-15 days from the time the first batch of seedlings from any primary bed have reached optimum pricking out size of about 7-8 cms. Using the above method, to eliminate the less vigorously growing seedlings at the primary nursery stage itself, there could be substantial improvement in volume production per unit area of such Eucalyptus plantation, mainly through eliminating a large number of small sized (both in diameter and height) stems and replacing them by genetically superior individuals capable of better growth (diameter and height) in competition with others, for the limited moisture and nutrients available under field conditions with close spacing (2x2 mts. or 2.5 x 2.5). The additional expenditure involved in this operation of rejecting about 50% of seedlings from primary beds, which can substantially improve the total volume production from plantations at a later stage, is only the additional cost of raising and maintaining an equal number of primary beds more.

5. In order that there is adequate scope for expression of inherent vigour by seedlings in the primary beds right from the stage of germination, it is essential that the following precaution are taken in the formation, sowing and maintenance of the primary beds.

1. The primary beds should be as level as possible and small in size (about 2 mts. long and 1 mt. wide at most), and the sand and soil thoroughly mixed after powdering and spread uniformly.
2. The seed should be sown uniformly all over the bed, at the rate of about one ounce of cleaned seed per bed (not too dense or too light).
3. It is preferable to sow the seed in lines (ridges about 0.2 mm deep) spaced about 5 cms. apart.
4. The seed is well mixed with fungicide, sand etc., before sowing, to get an even and uniform spread of seed all over the bed.
5. The beds are lightly covered with hay or such other leafy material, and watered with fine rose water to prevent disturbance to the minute seed. It is expected that a standard primary bed could produce between 4-8000 seedlings in all at above seed rate depending on the purity of seed, and care taken in nursery management. It is expected that germination of the seed starts within about 7 days and is completed within a few days. The first batch of seedlings in the primary bed will be ready for pricking out in about 4-5 weeks from the time of sowing, under proper nursery management. Selected individual seedlings of proper size could be used for pricking out from then on over a two week period utilising only about 50% of the seedlings in the bed, and discarding the rest. In order to eliminate temptation at a later stage for use of the left over (discarded) seedlings by the lower staff, it is necessary that such beds are ploughed up (destroyed) after using the required seedlings at the first stage.

6. All the Divisional Forest Officers are requested to adopt this technique of utilising only the vigorously growing seedlings from the primary beds, utilising the techniques indicated above, for the 1982-83 Eucalyptus nursery raising season for about 50% of the polythene bag seedlings to be raised this year for use in planting by department on the 1983 rains. By adopting this method, it is expected that the cost of raising such poly bag seedlings may not increase even by one paise per bag, considering the over all cost of raising and maintaining the increased (twice) number of primary nursery beds.

7. In order to obtain positive information about the genetically inferior nature of the primary seedlings that are left out in the primary beds, compared to the faster grown seedlings used for pricking out into bags, the Divisional Forest Officers may utilise the rest of the seedlings also from a few beds to raise about 10% of the total stock of Eucalyptus seedlings to be grown during the year in each nursery, and raise bag plants with those also, however keeping the identity of some, strictly separate at all stages in the nursery, by forming separate beds with them, at one end, and putting distinguishing boards against such beds. Such seedlings would also be planted separately in a block, keeping their identity carefully in the field also at all times, so as to get a clear idea of their performance vis-a-vis the rest of selected seedlings planted in balance area, in terms of height and diameter growth at various ages.

8. All the Divisional Forest Officers raising Eucalyptus nurseries in 1982-83 for raising plantations departmentally in 1983 rains, are requested to follow these instructions scrupulously and report action taken and results obtained at nursery stage by July next year. If they have any doubts on the details of procedure to be adopted in the primary nursery raising or grading of the seedlings etc., in the primary nursery they may obtain the required clarification from Addl. Chief Conservator of Forests (Social Forestry) by writing to him or through discussions during his period i.e. visits to their Divisions/Circles.

9. All the Divisional Forest Officers and Conservators of forests are requested to acknowledge the receipt of this Circular letter at once.

Sd/- A.L. Rao,  
Addl. Chief Conservator of Forests.

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# DEPARTMENTAL TEST-OFFICE PROCEDURE & ACCOUNTS DEFINITIONS

**AVERAGE PAY:-** The calculation of average pay arises in the case of leave salary. Average pay is the average of monthly pay earned during the complete 10 months immediately preceding the month in which the leave occurs which necessitates the calculation of average pay. Half average pay and quarter average pay are calculated on the same basis.

(Vide F.R. 9)