

TECHNICAL NOTE NO.36

MORTALITY OF EUCALYPTUS HYBRID AND EUCALYPTUS GRANDIS

Introduction:

Eucalyptus being a quick growing species came to be raised on fairly large scale particularly for the Pulp and Paper Industry whose demands are progressively rising. Initial successes of the plantation provided a great temptation to extend its cultivation in different regions at times without any preliminary experimental and exploratory work. From an area of about 1000 ha. 1961.62 the Eucalyptus plantations were raised in an area of 46,000 ha. During 1971-72.

The initial enthusiasm could not be sustained for any length of time. Heavy mortality and damage resulting from diseases and fire has been reported from different parts of country. In this Technical Note, mortality has been reported from Mysore and Kerala, only these two States are dealt with in this Technical Note.

Area planted up:

In Mysore state are of Eucalyptus hybrid plantation is about 150,000 ha. Distributed as follows, rainfall wise,

80" and above	50,000 ha.
Above 40 " and below 80 "	80,000 ha.
Below 40 "	20,000 ha.

In Kerala the Division –wise and year wise plantation of Eucalyptus hybrid and E-grandis is as follows:

	Area in Hectares					
Name of Division	1966	1967	1968	1969	1970	Total
Vazhachal	510.9	694.4	481.7	409.2	208.5	2394.7
Perumuzhi	..	763.6	507.6	225.4	260.5	1757.1
Kalady	190.2	443.9	445.8	406.00	289.5	1775.4
Perumbavoor	790.2	855.8	911.5	430.00	...	2087.5
Total	1491.3	2757.7	2346.6	1470.6	758.5	8014.7

The natural forests in Kerala consist mostly of the moist deciduous type in Perumbavoor Division and mostly semi-evergreen and evergreen type in the other 3 Divisions. The Average rainfall in these areas is about 130 to 150 inches and the precipitation is greatest during the months of July and August. The elevation varies from 100' to 1600'.

Eucalyptus grandis is planted on better sited and at higher elevations. About 60% of the area is under Eucalyptus grandis and the balance under Eucalyptus hybrid.

Pathogen:

The mortality is primarily due to the following pathogen:

Corticium salmoicolor (pink disease) & Cyindrocladium guinguisseptatum:

These fungi are known to India. They are found in rubber plantations and hence exist in an endemic form.

Symptoms: Corticium Salmonicolor : It is also known as pink disease, from the color of the spores. It attacks stems and branches. The symptoms are in evidence from the second year. Dying commence from top downwards. It is active during the rainy season.

Cylindrocladium quinquiseptatum: To begin with, minute, dot brown spots appear on both sides of the leaves of the lower branch . these spots soon enlarge and the leaves got twisted and curved; the twigs and branches also got effected forming cracks and lesions. In all cases, the defoliation and dying of branches proceeds from below upwards. It was first noted in 1967. This fungus is very active during hot weather.

Extent of Damage:

No systematic survey has been carried out to determine the extent of damage. However, in some of the areas, the damage is almost complete whereas in some more favourable areas the damage is negligible. Plantations of Munnar Division in Kerala are completely free from the attack. Both the species, viz. Eucalyptus hybrid and Eucalyptus grandis are equally susceptible. However, Eucalyptus grandis becomes more liable if planted at low elevations.

Probable causes:

Field observations in Mysore have indicated that mortality was heavy in high rainfall zones. It was further observed that the incidence was greater in plantations located near uncleared natural forest, thus giving the impression that this fungus is native and is in endemic form in our natural forests. In so-far-as Cylindrocladium with (i) intensive agricultural activity particularly involving tapioca which creates green house conditions and (ii) neglect of important silvicultural operations such as intensive weeding etc.

Control measures:

Control has been worked out in the case of rubber, where pruning of affected parts and painting with Bordeaux paste has been found successful. However, these control measures are not feasible on a large scale in plantations. Intensive research is needed to devise suitable control measures.

Future line of action:

(1) Detailed survey:

A co-ordinated research scheme entitled "Survey of Forest pests and diseases of important tree species and their control" is under active consideration of the Govt.

(2) Detailed studies to determine the epidemiology of the disease

(3) Location of resistant trees.

(4) Plantation of Alternative quick growing species.

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Sub: Mortality of Eucalyptus hybrid and Eucalyptus grandis.

Technical Note No.36.

I am sending herewith 5 copies of the above cited technical note for your information and use.

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Endt. On P1-40269/62 L. Dis.

Chief Conservator's office, Trivandrum,

Dt/31.8.'72.

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Endt. On PC-21761/72 dt. 25.11.'72.

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For Conservator of Forests.