

FROST DAMAGE ON EUCALYPT TREES IN COAL DISTRICT

by R.I. Button

An area was planted up with Hamel produced seedlings of Eucalypts, to find out what species would be able to survive the climatic conditions, and grow in sandy soils which are found in abundance in the Eastern Collie district.

LOCALITY HISTORY

Proprietary compartment 10, a low lying sandy flat, very exposed to frost. This area was originally planted with Pinus pinaster in 1937. Following a fire it was replanted in 1944. The area was twice dressed with superphosphate, only the individual plants were treated. In 1960 the area was clear felled and further treatment abandoned.

NEW TRIAL PLOT

Between the 7th. and 10th days of June, sixteen plots were established with thirteen different species of Eucalypts, each plot containing approximately 300 trees. Each plot was ripped prior to planting.

THE WEATHER

Frost was recorded on the 20th. and 29th days of June, the lowest temperature recorded was 31^oF on the 29th June, 1966.

INSPECTION

All the plots were inspected for frost damage on the 1st July, 1966, showing the following results

PLOT NO.	SPECIES OF EUCALYPTS	NOT AFFECTED BY FROST	FROST KILLED GROWTH TIP	PARTIAL DEATH BY FROST	TOTAL DEATH BY FROST
1	MICROCORYS	37%	- %	50%	13%
2	"	"	-	"	"
3	PROPINGUA	88	12	-	-
4	PILULARIS	42	-	43	15
5	RESINIFERA	32	49	19	-
6	MACULATA	94	2	4	-
8	MICROCORYS	4	20	49	27
9	ROBUSTA	68	27	3	2
10	SIEBERI	13	10	27	50
11	CAMALDULENSIS	100			
12	BICOSTATA	99		1	
13	GIONIOCALX	78	4	16	2
14	MICROCORYS	12	22	38	28
15	NITENS	100			
16	LINDLYANA	100			
17	SALIGNA	100			

FURTHER OBSERVATIONS

24.

Plot no. 9 had 20% damage by insects.

Plot nos. 15-17 inclusive, plant heights averaged 3 inches.

In plots that were affected by frost, it was found the larger and exposed plants were damaged by frost. The small plants planted in furrows six inches below the surface were not affected by frost.

CONCLUSIONS TO DATE

It would appear plot nos. 11, 12, 15, 16 and 17 will stand frost and temperatures down to 31^oF.

Plot nos. 3, 6, 9 and 13 need further observation as there had only been two frosts since the planting of these plots, and there is an average of 16 frost days per year in the Collie district, with in some cases lower temperatures.

These factors can alter the affected and death percentages over a one year period.

Plot nos. 1, 4, 5 and 10 would not be suitable species to grow in these conditions, with the present methods of raising these plants.

REPLANTING

Plot nos. 1, 2, 4 and 5 were partially replanted with *Euc. saligna* and *Euc. bicostata*; the seedlings were raised at Hamel Nursery.

Plot nos. 8 and 14 were partially replanted with *Euc. robusta*, *Euc. bicostata*, *Euc. pilularis*, *Euc. paniculata*, *Euc. obliqua* and *Euc. maculata*. These seedlings were raised at Collie.

Date planted 6th. July, 1966.

THE WEATHER

Frost was recorded on Sunday the 10th July, the temperature was 32^oF; no rain had fallen since date of planting.

INSPECTION

All these species were thoroughly inspected on the 11th July and it was found that all plants were not affected by frost.

CONCLUSIONS TO DATE

Euc. robusta and *Euc. pilularis* locally grown from seed appear well able to stand a temperature of 32^oF as also do *Euc. paniculata*, *Euc. obliqua* and *Euc. maculata* will also grow in these conditions.

From observations the locally raised plants are sturdier and with more woody stems and appear better suited to local conditions.