PLANTING KARRI WILDINGS.

By P. Christensen.

In Karri forest management these are times when artificial regeneration of an area with seedlings might be considered. i. e. when natural regeneration is either very poor or fails completely in an area. Wildings are often in abundance elsewhere and constitute a readily available source of cheap planting stock. From experiments which have been carried out at various times in the past, it appears that:-

1. Small seedlings do not do too well.

2. There appears to be little difference in survival whether the plants are pulled up, lifted carefully or lifted and balled.

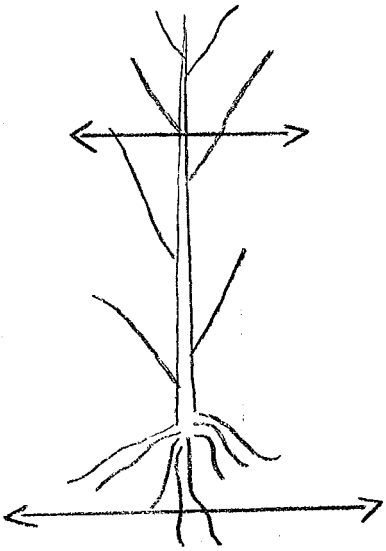
3. Scrub competition is an important factor.

Last year in June further trial plots were put in to determine the best size of seedlings to use and the best pre-planting treatment to give them. The trials were located on Spring burn sites on Wallace Road; the seedlings were obtained from Pine Creek. (1 year old.)

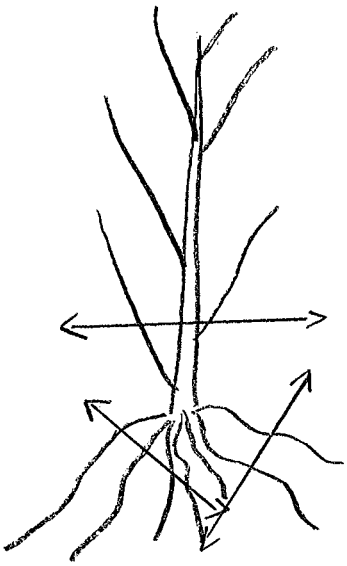
Treatment No.	Size of Transplant.	Treatment.
1	6"	Lifted carefully, roots and shoot not touched
2	12"	" " " " " "
3	24"	" " " " " "
4	12"	Pulled up, roots and shoot trimmed
5	24"	" " " " " "
6	36"	" " " " " "
7	12"	" " " " " + hormone
8	24"	" " " " " "
9	36"	" " " " " "
10	12"	Pulled up, both roots and shoot cut back heavily.
11	24"	" " " " " "
12	36"	" " " " " "
13	12"	" " " " " + hormone
14	24"	" " " " " "
15	36"	" " " " " "

Pictorial explanation of cutting treatments.

Roots and shoot trimmed.



Roots and shoot cut heavily.



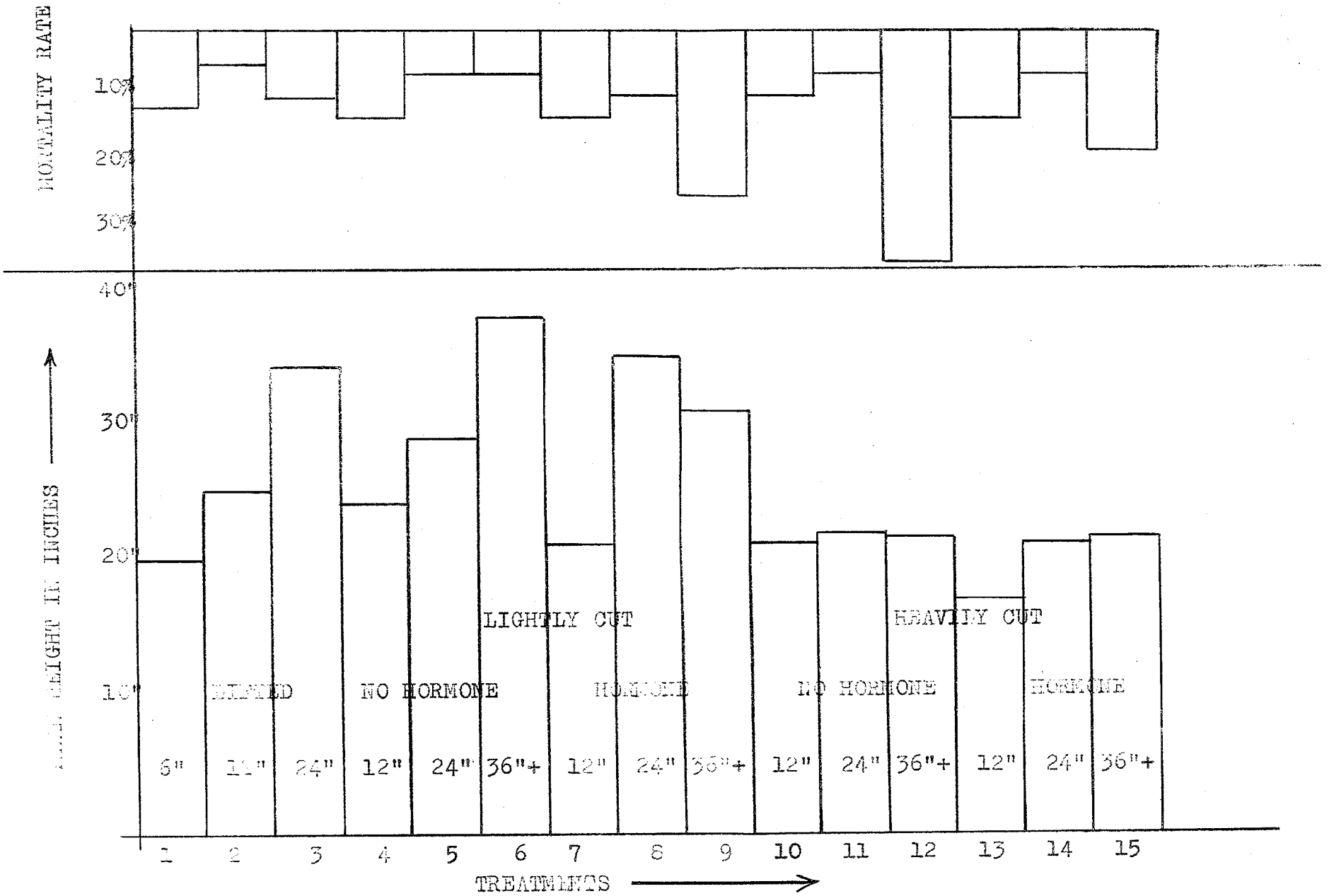
The hormone used was a root growth promoting hormone and the plants were treated by dipping their roots into a bucket containing a solution of the hormone. Each of the 15 treatments were represented by a row of 10 plants, this unit was repeated twice on each of three different sites, i. e. 60 plants per treatment, giving a total of 900 plants. Location of each treatment unit of 10 plants within each site was entirely random. The plants were transported to the site in plastic bags and planted in the normal manner. All plants were given 2oz. of Nutrifert in October. This was applied by sprinkling it onto the soil surface round the base of the plant.

The plots were inspected in mid-March, the heights of the transplants and the number of deaths being recorded for a preliminary analysis. Figure 1 is a summary of the results.

It appears that the Hormone treatment had no effect, therefore this treatment has been disregarded in the following table and the Non-hormone treatments combined as one.

WILDING EXPERIMENT

HISTOGRAM SHOWING THE MEAN HEIGHT AND PERCENTAGE MORTALITY OF SEEDLINGS UNDER THE VARIOUS TREATMENT



SUMMARY OF PERCENTAGE SURVIVALS.

Treatment / Height Class	6"	12"	24"	36"+
Lifted plants	88.3	95	90	No treatment
Lightly cut plants	No treatment	86.7	91.7	89.6
Heavily cut plants	No treatment	88.3	93.3	77.4

SUMMARY OF MEAN HEIGHTS OF SEEDLINGS (IN INCHES).

Treatment / Height Class	6"	12"	24"	36"+
Lifted plants	20.2	23.6	34.6	No treatment
Lightly cut plants	No treatment	22.8	32.2	34.7
Heavily cut plants	No treatment	19.4	21.8	22.3

The percentage survival is good in all cases except perhaps the heavily cut back 36"+ plants. As this is the case, we can do a straight comparison of mean heights. The figures are self-evident; the best treatments are 24" lifted, 24" and 36"+ lightly cut back. This is confirmed by Statistical Analysis which shows that these treatments differ significantly from all the rest at the .001 level of significance. None of the other treatments differs significantly from each other.

It seems unlikely that lifting the plants had any beneficial effect; this is illustrated by the % survivals. Lifted 24" 90%, lightly cut 91.7%. Thus the important factor is the size of the plants.

In conclusion, therefore, it seems that Wildings of 24"-36"+, pulled from the ground, with their foliage and longest roots lightly trimmed, gave the best results. The percentage survival amongst plants of this size varied between 78.8% on the worst site and 93.8% on the best site. Most of the deaths in the experiment occurred amongst the 36"+ plants. Some of these were 4'-5' high before trimming, and it is amongst these that most of the deaths have occurred. i.e. the ideal transplant size is probably somewhere between 24"-42"; these also appear the healthiest plants in the plot.

In the analysis of this experiment total heights rather than percentage gain in height was used. This was done because although the survival amongst 24" stumped plants was good, (93.3%), it is total height

we are interested in. The reason for this, as mentioned earlier, is scrub competition. Wildings are often planted into 1 year-old scrub and the taller the plant starts off, the better its chance of survival.