THE EFFECT OF MILD BURNING ON JARRAH GIRTH INCREMENT

by J. McCormick

An experiment was established near Dwellingup in 1963 to find the effect of burning on Jarrah G.B.H.O.B. increment. One part of the experiment showed no significant effect of mild Spring and Autumn burning on girth increment.

A total of 30 plots were established. Five trees were selected in each plot and fitted with dendrometer bands. Six plots were treated with a mild Spring burn (Nov. '64); six plots with a mild Autumn burn (Apr. '65), and a further six plots held as a control thus giving 30 trees in each of the three categories for comparison.

Dendrometer readings were taken at monthly intervals and the total growth of the 30 Spring and 30 Autumn trees was compared with that of the control trees for a 12 month period both before and after burning. The results were:-

Measurement Period	Mean G.B.H.O.B. Increment					
	Spring Trees	Control Trees	Diff.	Autumn Trees	Control Trees	Diff.
12 Months before burning :	.463"	.446"	.017"	.422"	.407"	.015"
12 Months after burning :	.507"	.423"	.084"	.453"	.432"	.021"
Difference between means were found to be not significant.						

The data was corrected to a standard 30 day period and a statistical test applied to 48 growth periods in an endeavour to locate any significant alteration in G.B.H.O.B. growth due to the burning treatment during the 12 months following Spring and Autumn burning. This test was also applied for the 12 months prior to burning.

Results. (i) Spring Mild Burn 12 months after burn.

Of the 12 periods examined (Fig. 1) only three periods (20, 21 and 26) showed any significant growth difference between treatment and control trees. These differences amount to a significant increase in increment on the control trees as compared with the treated trees at the beginning of the main growth cycle and a significant increase in increment on the treated trees over the controls at the end of the main growth cycle.

It was observed that the same thing occurred during the 12 month period before burning (Fig. 2 periods 8 and 15). A possible explanation is that these differences are a growth characteristic of the two groups of trees involved and are not, therefore, a result of the burning treatment.

(ii) Autumn Mild Burn 12 months after burn.

Of the 12 periods examined (Fig. 3), none showed any significant difference and only one significant period before burning (Fig. 4 period 15).

The original G.B.H.O.B. and bark thickness measurements of the 90 trees considered were taken on the 26th February, 1963 and the most recent measurements on the 13th June, 1966. The measurements are compared thus:-

	26/2/'63	13/6/'66	Increment for period
Mean G.B.H.O.B. of 30 Spring trees	2'7¼"	2'9¼"	2"
" " " " Autumn trees	2'9¾"	2'11½"	1¾"
" " " " Control trees	2'7¾"	2'9½"	1¾"
Mean 4 x B.T. of 30 Spring trees	.685	.737	.052
" " " " Autumn trees	.718	.775	.057
" " " " Control trees	.667	.740	.073

From these figures, little of significance arises which could affect the analysis save a slight increase in G.B.H.O.B. on the Spring trees over the Autumn and Control trees.

****

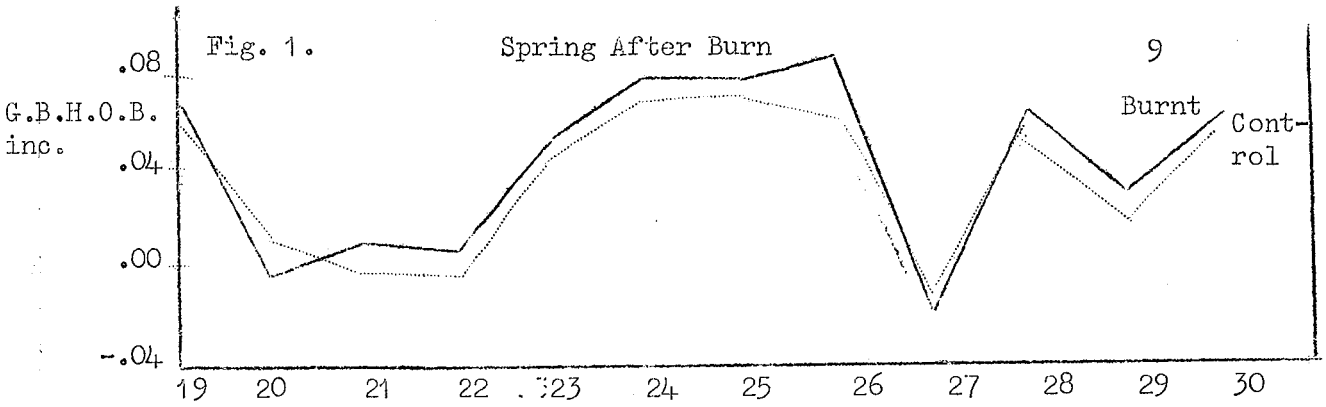
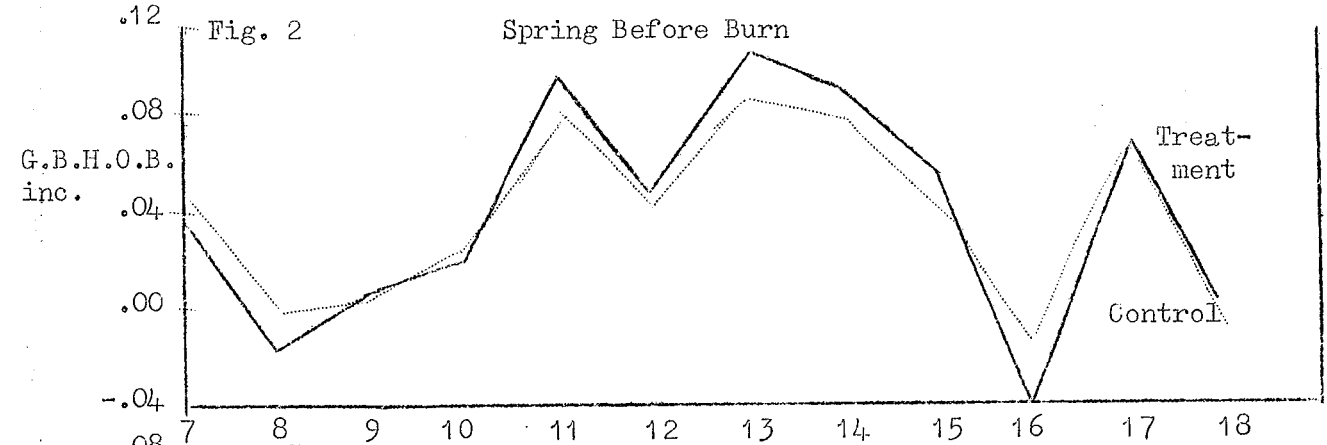
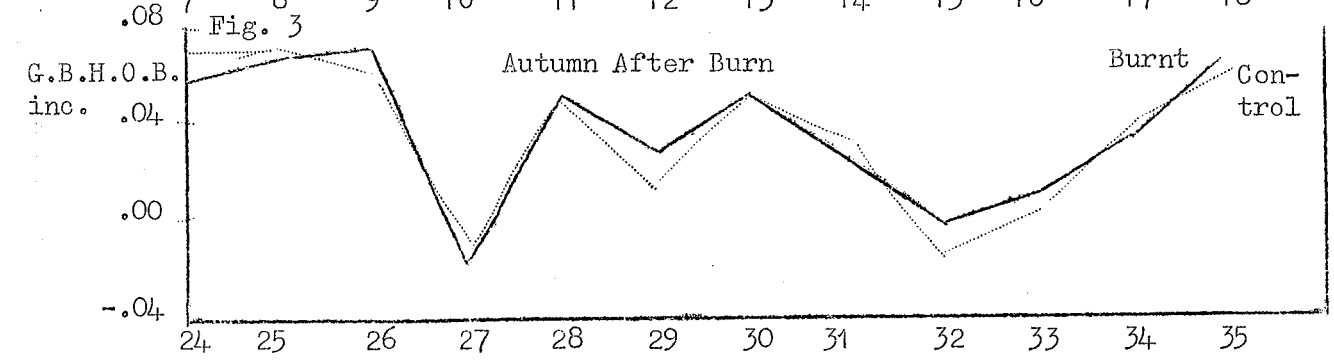
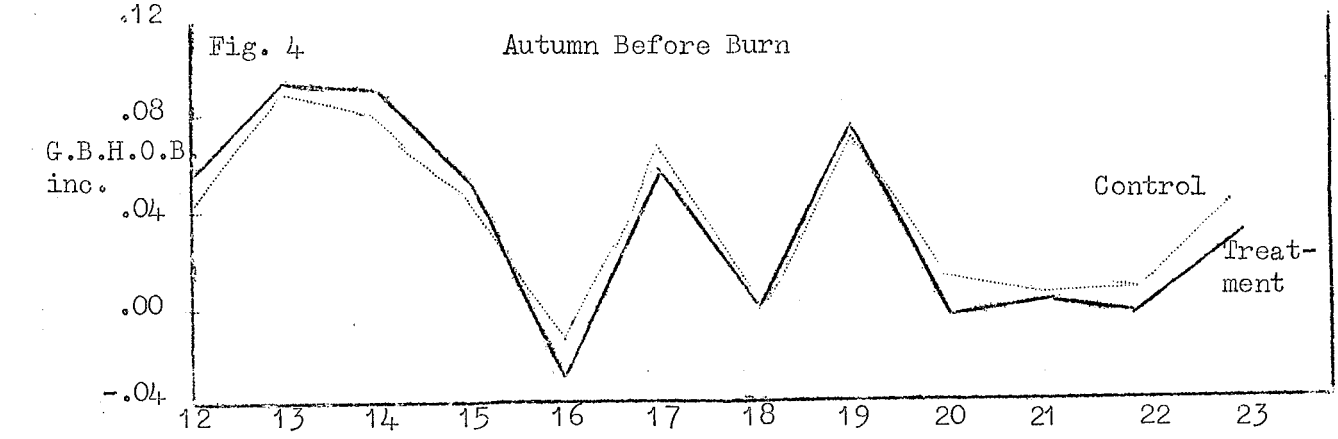


Fig. 1.
Spring After Burn
G.B.H.O.B. inc.
.08
.04
.00
-.04
Burnt
Control
19 20 21 22 23 24 25 26 27 28 29 30


.12
Fig. 2
Spring Before Burn
G.B.H.O.B. inc.
.08
.04
.00
-.04
Treatment
Control
7 8 9 10 11 12 13 14 15 16 17 18


.08
Fig. 3
Autumn After Burn
G.B.H.O.B. inc.
.04
.00
-.04
Burnt
Control
24 25 26 27 28 29 30 31 32 33 34 35


.12
Fig. 4
Autumn Before Burn
.08
G.B.H.O.B. inc.
.04
.00
-.04
Control
Treatment
12 13 14 15 16 17 18 19 20 21 22 23