ACACIAS AND HEAT

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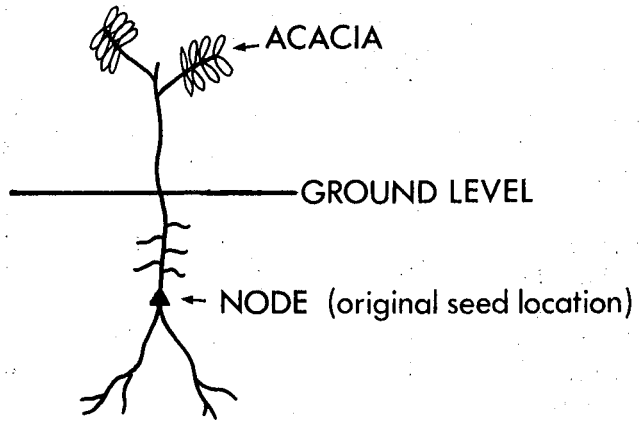
It has been found that a node on the root of acacias is the location of the seed capsule from whence the plant originated.



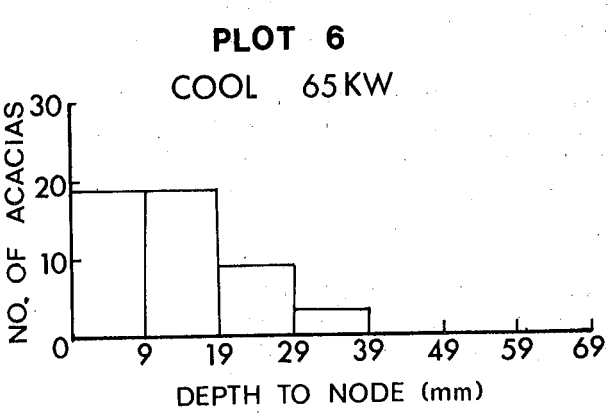
Since acacias require heat to germinate it was believed that measurement from the node to ground level would vary in different fire intensities.

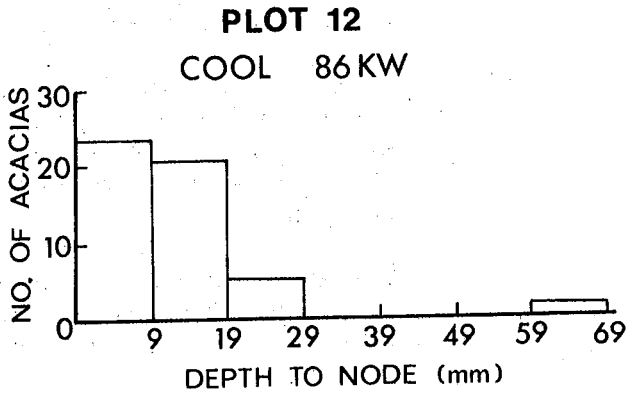
To study this in a field situation two cool (65 Kw, 86 Kw) and two hot (639 Kw, 1207 Kw) burns were sampled. Fifty random samples were measured from each burn plot. The accompanying graphs show the distribution of samples in relation to depth of the root node.

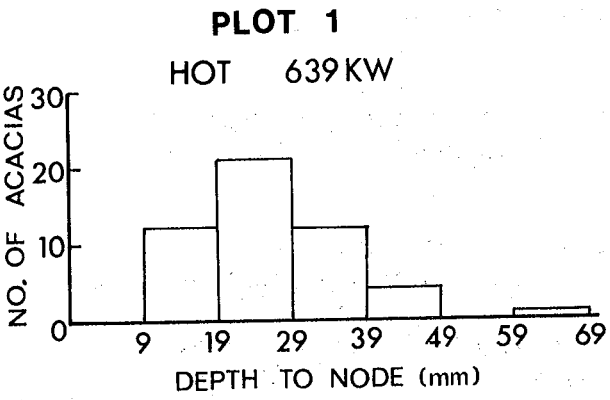
It will be noted that in the cool burns (Plots 6 and 12) the depth of germination is skewed toward the shallow side whereas in the hot burns (Plot 1 and 18) a more normal curve is evident.

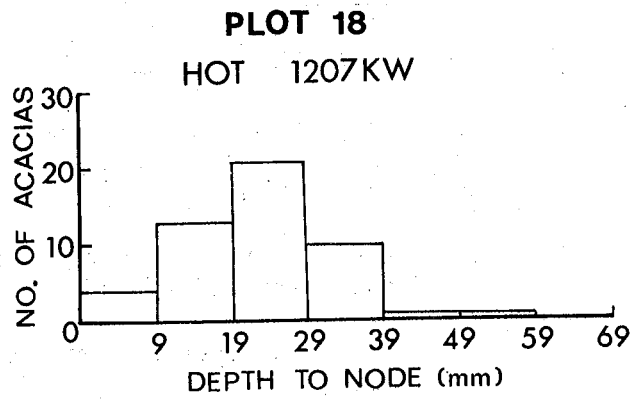
The probable reason for the different curves for depth of germination is the different heat intensities of the fire. Hot burns regenerate acacias from deeper levels. The marked lack of germination from shallow levels (0-9 mm) in the hot burn is undoubtedly due to destruction of seed by heat. The germination from shallow depths, in cool burns, occurred only where acacias were present immediately before burning.

One may speculate that an assessment of fire intensity could be made by studying the distribution of acacia node depth.


PLOT 6
COOL 65 KW
NO. OF ACACIAS
30
20
10
0
9 19 29 39 49 59 69
DEPTH TO NODE (mm)


PLOT 12
COOL 86 KW
NO. OF ACACIAS
30
20
10
0
9 19 29 39 49 59 69
DEPTH TO NODE (mm)


PLOT 1
HOT 639 KW
NO. OF ACACIAS
30
20
10
0
9 19 29 39 49 59 69
DEPTH TO NODE (mm)


PLOT 18
HOT 1207 KW
NO. OF ACACIAS
30
20
10
0
9 19 29 39 49 59 69
DEPTH TO NODE (mm)