PROGRAM A 1.1



# BURNING UNDER YOUNG EUCALYPTS

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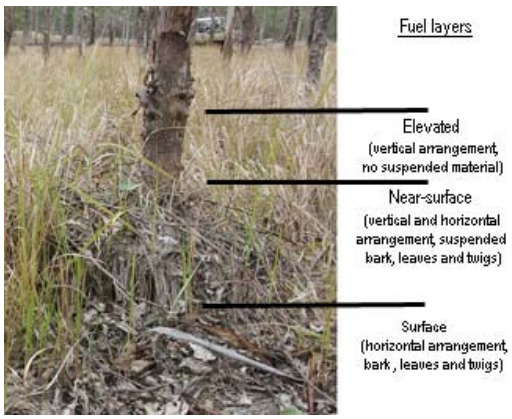
## Objective

Determine the stand age (stem size), fuel characteristics, and weather conditions that are appropriate for prescribed burning in order to minimise damage to plantation trees




## Fuel Characteristics

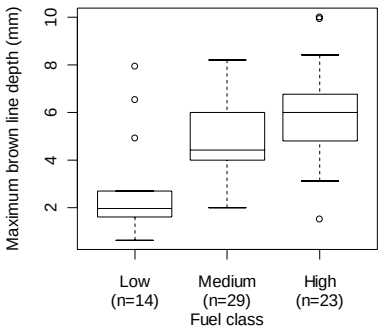
In sub-tropical eucalypt plantations, *Imperata cylindrica* (blady grass) is the predominant fuel as it is generally unpalatable to livestock. As the plantations develop, there are increasing quantities of bark, leaves and twigs. Prescribed burning can keep near-surface fuel load to below pre-burn levels for at least 2 years.

## Fire Behaviour

Two fire behaviour models have been developed specifically for young eucalypt plantations under benign weather conditions. The most important variables affecting fire behaviour are near-surface moisture content, fuel load and near-surface fuel height.

## Stem Damage

The depth of bark cell death can be measured within hours of exposure to fire by measuring the depth of the brown line. The depth of lethal heat penetration (i.e. brown line depth) into the bark is directly related to the fuel load immediately surrounding the stem.


## Conclusion

Prescribed burning will not cause long-term damage to trees as small as 5cm DBH depending on the fuel load immediately surrounding the stem. Fireline rate of spread will be less than 180 m/hr in low wind speed conditions. Short-term growth (i.e. within 2 years) is unaffected by low to moderate intensity fire and full crown recovery takes less than 9 months.