

PENETRATION AND PERSISTENCE OF WATER AND FOAM DROPS FROM A MEDIUM HELICOPTER

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INTRODUCTION

The aim of this project was to test the effect of canopy type and foam concentration on the penetration and persistence of aerially applied suppressant. This work was undertaken as part of the CRC's summer student program. Eucalypt woodland and plantation pine (15 years old) canopy representative of the Canberra region were selected, and a grassland site was used for comparison.



METHODS

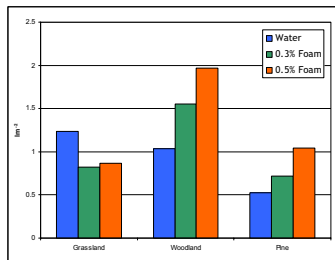
A Bell 212 helicopter with a Simplex 304 belly-tank was used to deliver drops of water, 0.3% and 0.5% class A foam. Three 50x30 metre plots were set up in each vegetation type with collection containers laid out on a five metre grid to determine drop patterns. Surface fuel moisture content (FMC) samples were taken from a transect across each drop footprint to monitor the persistence of suppressant on the ground.



RESULTS

As expected, the denser pine canopy intercepted more suppressant than the woodland canopy.

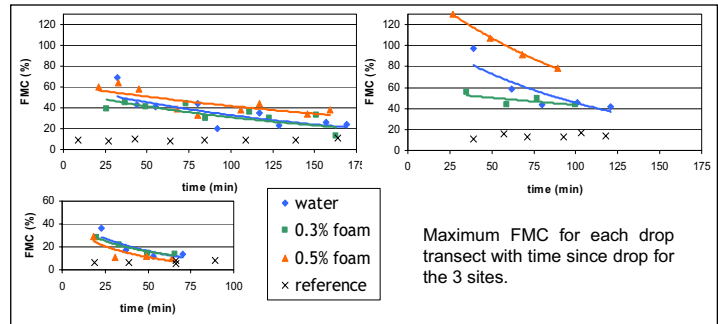
In both canopy types the drops with highest concentrations of foam had the best penetration (see graph below left). This result was unexpected and contradicts previous observations



Mean volume per square metre of all containers registering more than a trace of suppressant across the three sites

and the expected dominating effect of high foam concentrations adhering to foliage. This result may have been confounded by the consistent order of drop type at both sites and increasing drop accuracy. Replication is required to remove this effect.

Foam suppressants reduce the rate of evaporation of water. However in this experiment, no consistent difference in persistence of suppressants could be found (see graphs below). This was due to the variation in coverage levels between plots and different site microclimatic conditions.



0.3% foam drop through woodland canopy



CONCLUDING DISCUSSION

Many problems occurred during data collection. Most of these could be attributed to not having enough people on the ground assisting with data collection. The major limitation of this work was lack of replication. Further experimentation is required to determine the effect of foam concentration on canopy interception. The inclusion of higher foam concentrations in future studies would also help clarify this relationship.