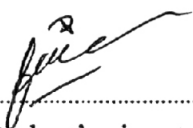


Fongkeo Boualapha 2006: Fire Behavior and Forest Fire Control at Lad Kra Ting Plantation, Sanam Chai Khet District, Chachoengsao Province. Master of Science (Tropical Forestry), Major Field: Tropical Forestry Interdisciplinary Graduate Program. Thesis Advisor: Associate San Kaitpraneet, Ph.D. 87 pages.
ISBN 974-16-1791-7

The objectives of the study were to determine the history and causes of fire occurrence, fire behavior, and forest fire control of *Eucalyptus camaldulensis* and *Acacia mangium* plantations of five years old with 2x3 meter spacing at Lad Kra Ting, Sanam Chai Khet District, Chachoengsao Province. Field experiments were conducted during May, 2004 to April, 2006. Three plots of high, moderate and least amount of fuel of 2 selected species, including *Eucalyptus camaldulensis* and *Acacia mangium* were randomly studied, with the plot size of 10x10 square meters each. Inside of main plot 2 small plots were set up, plot size was 1x1 square meter each in order to study fuel moisture content, fuel loading, average fuel depth, and heat content of fuel particles. The six main plots were burned to investigate fire behavior, and to find correlation equation of flame length, and fire intensity.

The results were revealed that the history and causes of fire occurrence in Lad Kra Ting plantation 10 years ago (1996-2005), the fire was occurred 15 times. The main causes of fire occurrence in this area was honey collectors, followed by incendiary, and fires outspreading from nearby farms. The fire behavior of *Eucalyptus camaldulensis* plantation were found the average fire spread rate was 0.68 meter per minute, average fire intensity was 189.49 kilowatts per meter, and average flame length was 1.30 meters. The correlation equation between flame length and fire intensity was $L = 0.90 I^{0.14}$, and the correlation equation of fire intensity and flame length was $I = 3.19 L^{6.21}$. The fire behavior of *Acacia mangium* plantation were found that average fire spread rate was 0.28 meter per minute, average fire intensity was 87.44 kilowatts per meter, and average flame length was 1.50 meters. The correlation equation of flame length and fire intensity was $L = 0.08 I^{0.54}$, and the correlation equation of fire intensity and flame length was $I = 77.99 L^{2.27}$. Kind of the forest fire was surface fire. Fire control at Lad Kra Ting Plantation was at good level, fire prevention included weed removal and removed fuel in fire break before fire occurrence, fire detection included five lookout towers with five men each and two units of fire crew patrol, 4 men each with 24 hours working, forest fire pre-suppression included preparing of fire suppression crews, tools and equipments of fire suppression, fire suppression was rapidly conducted, with least amount of damage due to low fire danger rating.


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Student's signature


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Thesis Advisor's signature